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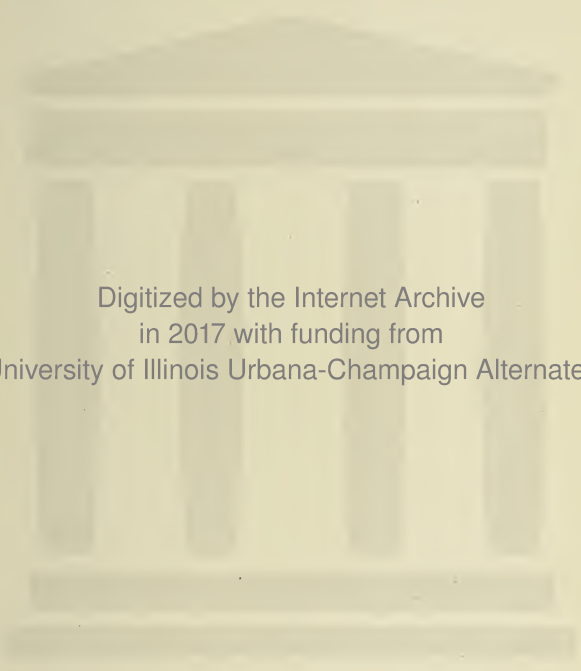
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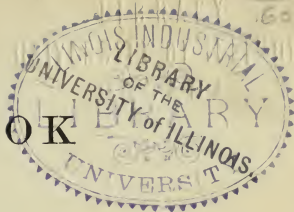
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1. AGARICUS (PHOLIOTA) CAPISTRATUS

2. AGARICUS (PHOLIOTA) LEOCHROMUS

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HANDBOOK

OF

BRITISH FUNGI,

*With full Descriptions of all the Species, and Illustrations
of the Genera.*

BY

M. C. COOKE, M.A.



London and New York:
MACMILLAN AND CO.

1871. +

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P R E F A C E.



THIRTY-FIVE years ago one of the volumes of the "English Flora" contained full descriptions of all the species then known of British Fungi. Prior to this several floras, and especially Mr. Samuel Gray's "Natural Arrangement" and Withering's "Arrangement," included the fungi; but it was left to the Rev. M. J. Berkeley to collect the materials, and eliminate from them, a Mycological Flora of the British Islands. During the thirty-five years that have elapsed since the appearance of the last complete Mycologic Flora, no attempt has been made to revise it, to incorporate species since discovered, and to bring it up to the standard of modern science. No apology, therefore, is necessary for the present effort, since all will admit that the want of such a manual has long been felt, and this work makes its appearance under the advantage that it seeks to occupy a place which has long been vacant.

It was my intention at first to have added an introduction, treating of the structure and affinities of the different orders and genera included in the present volume, with an explanation of my own views as to the classification adopted, but as the work proceeded it so far exceeded the dimensions originally estimated, that it was found impossible to do justice to this portion of the subject here, and the "Introduction" has been postponed, in the hope that hereafter it may appear as a separate volume. It may suffice to state that, in the face of the bewildering chaos of new genera which have of late been proposed on the Continent, especially for Ascomycetous forms, I have endeavoured to avoid, as much as possible, encumbering these pages with a nomenclature often fanciful, seldom necessary, and which may, at best, be regarded as transitional. It is hoped that such changes as

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PREFACE.

have been made will commend themselves to the student as facilitating the study of organisms by no means easy of comprehension.

The arrangement of the Hymenomycetes is based upon the latest views of the illustrious Fries, with such additions as were recommended by Mr. Worthington Smith in a recent volume of the "Journal of Botany." In fact, Mr. Smith's arrangement is adopted *in toto*, and I availed myself of his experience by associating him with myself in this portion of the work.

During the progress of this "Handbook" I have to acknowledge with gratitude the suggestions, and aid, of numerous friends, especially of Professor Elias Fries, the Rev. M. J. Berkeley, M. A., C. E. Broome, Esq., F.L.S., W. G. Smith, Esq., F.L.S., Dr. E. Capron, Dr. Bull, and H. C. Ravenal, Esq. For the measurements of the spores in the Agaricini I am indebted to Mr. W. G. Smith, as well as for the drawings of many of the woodcuts. North American localities have been inserted for some species, but I am aware that this portion of the work is very imperfect.

I am conscious that I have not produced a perfect work. Pursuing the study of Fungi as a recreation in the intervals of the daily business of life, it was no easy task to prepare and arrange the descriptions of nearly three thousand plants, compare specimens and figures, and measure their spores. It would be presumption to suppose that this has in all cases been done without error, although it is hoped, with some confidence, that the errors are few, and of no great importance.

Subscribers will not regret that, instead of 600 pages they will receive more than 900; and instead of 200 figures upwards of 400. No effort has been spared to make this work worthy of their confidence, and, by the publication of an occasional supplement, it is hoped to maintain it for many years as the "Handbook" for every student of British Fungi.

M. C. C.

Upper Holloway, July, 1871.

HANDBOOK

OF

BRITISH FUNGI.

Sporidiifera (27)

Dir. II. p. 627

DIVISION I. SPORIFERA. *Spores naked.*

- | | |
|---|--------------------------|
| I. Hymenium free, mostly naked, or soon exposed. | <i>Hymenomyces.</i> 1 |
| II. Hymenium enclosed in a peridium, ruptured when mature. | <i>Gasteromyces.</i> 334 |
| III. Spores naked, mostly terminal, on inconspicuous threads, free, or enclosed in a perithecium. | <i>Coniomyces.</i> 414 |
| IV. Spores naked, on conspicuous threads, rarely compacted, small. | <i>Hyphomyces.</i> 547 |

Family I. HYMENOMYCETES.

Mycelium floccose, giving rise at once to a distinct hymenium, or producing a variously shaped, naked, or volvate receptacle, even, or bearing on its upper or under surface various folds, plates, prickles, &c., clothed with fertile hymenial cells. Spores naked, mostly quaternate, on distinct spicules. *Berk. Introd. p. 351. Outl. p. 89.*

Hymenium, normally inferior—

- | | |
|---|-----------------------|
| Fruit-bearing surface lamellose. | <i>Agaricini.</i> |
| Fruit-bearing surface, porous or tubular. | <i>Polyporei.</i> 249 |
| Fruit-bearing surface clothed with prickles. | <i>Hydnei.</i> |
| Fruit-bearing surface, even. | <i>Auricularini.</i> |

Hymenium, superior or encircling—

- | | |
|--|--------------------|
| Clavate or branched, rarely lobed. | <i>Clavariici.</i> |
| Lobed, convolute, or disc-like, gelatinous ;
(fertile threads not compacted into a
true hymenium). | <i>Tremellini.</i> |

Order I. A G A R I C I N I.

Hymenium, inferior, spread over easily-divisible gills or plates, radiating from a centre or stem, which may be either simple or branched.—*Fr. Epicr. p. 2. Berk. Out. p. 89.*

The following analytical key to the genera of the *Agaricini*, and the subgenera of *Agaricus*, has been constructed by Mr. Worthington G. Smith, F.L.S., and by permission, we have adopted it here with his illustrations and tabular view of the sub-genera.

ANALYTICAL KEY.

In using the following key, the first and most important point to be determined in naming an Agaric is to ascertain the colour of the spores. The specimens used for study should always be perfectly fresh, and, if possible, young, as in many species the characters, especially of the veil, are evanescent. The habitat also will be found of considerable importance to beginners. The genera are printed in Capitals, and the subgenera in Italics. The numbers prefixed to the subgenera will enable the reader to refer at once to the Plates, where the numbers correspond.

I. Spores white, or very slightly tinted.—*Leucospori.*

* Plant fleshy, more or less firm, putrescent
(neither deliquescent nor coriaceous).

† Hymenophorum free.

Pileus bearing warts or patches free
from the cuticle

1. *Amanita.* 5-

Pileus scaly, scales concrete with the
cuticle

2. *Lepiota.* 1

† Hymenophorum confluent.

‡ Without cartilaginous bark.

§ Stem central.

|| With a ring

3. *Armillaria.* 18

|| Ringless.

Gills sinuate

4. *Tricholoma.* 29

Gills decurrent.

Separating from the hymeno-
phorum

v. *LEPISTA.*

* Not separating from the hy-
menophorum,

(See PAXILLUS.)

Edge acute

5. *Clitocybe.* 83-

Edge swollen

xi. *CANTHARELLUS.*

Gills adnate.	
Plants parasitic on other	
Agarics	xii. NYCTALIS. 231
Not parasitic.	
Milky	ix. LACTARIUS. 206
Not milky.	
Rigid and brittle . . .	x. RUSSULA. 217
Waxy	vii. HYGROPHORUS. 195
§ Stem lateral or absent	6. Pleurotus. 45
† With cartilaginous bark.	
Gills adnate	7. Collybia. 53
Gills sinuate	8. Mycena. 62
Gills decurrent	9. Omphalia. 77
* Plant tough, coriaceous, or woody.	
† Stem central.	
Gills simple	xiii. MARASMIUS. 232
Gills branched	xvi. XEROTUS. 248
† Stem lateral or wanting.	
Gills toothed	xiv. LENTINUS. 241
Gills not toothed	xv. PANUS. 244
Gills channelled longitudinally or crisped	xvii. TROGIA. 245
Gills splitting longitudinally	xviii. SCHIZOPHYLLUM. 246
Gills anastomosing	xix. LENZITES. 247

II. Spores rosy or salmon colour.—*Hyporhodii*.

* Without cartilaginous bark.	
† Hymenophorum free.	
‡ With a volva	10. Volvaria. 83
‡ Without a volva.	
With a ring	11. Chamæota. 86
Ringless	12. Pluteus. 87
† Hymenophorum confluent.	
‡ Stem central.	
Gills adnate or sinuate	13. Entoloma. 88
Gills decurrent	14. Clitopilus. 91
‡ Stem lateral or absent	15. Claudopus. 92
* With cartilaginous bark.	
Gills decurrent	18. Eccilia. 103
Gills not decurrent.	
Pileus torn into scales	16. Leptonia. 99
Pileus papillose, subcampanulate.	
Gills membranaceous, persistent. .	17. Nolanea. 101
Gills subdeliquescent	iii. BOLBITIUS. 170

III. Spores brown, sometimes reddish or yellowish brown.—*Dermini*.

* Without cartilaginous bark.	
† Stem central.	
‡ With a ring.	
Ring continuous	19. Pholiota. 164
Ring arachnoid, filamentous or evanescent.	
Gills adnate, terrestrial	iv. CORTINARIUS. 171
Gills decurrent, or acutely adnate, mostly epiphytal	21. Flammula. 120

- ‡ Without a ring.
 Gills adhering to the hymenophorum, and sinuate 20. *Hebeloma*. 111
 Gills separating from the hymenophorum, and decurrent vi. PAXILLUS. 194
 † Stem lateral or absent 22. *Crepidotus*. 125-
- * With cartilaginous bark.
 Gills decurrent 25. *Tubaria*. 135
 Gills not decurrent.
 Margin of pileus at first incurved 23. *Naucoria*. 127
 Margin of pileus always straight 24. *Galera*. 131
- IV. Spores purple, sometimes brownish-purple, dark purple, or dark brown.—*Pratella*.
 * Without cartilaginous bark.
 † Hymenophorum free.
 ‡ With a ring 26. *Psalliota*. 136
 ‡ Ringless 27. *Pilosace*. 139
 † Hymenophorum confluent.
 Veil normally ring-shaped on the stem 28. *Stropharia*. 139
 Veil normally adhering to the margin of pileus. 29. *Hypholoma*. 142
- * With cartilaginous bark.
 Gills decurrent 32. *Deconica*. 153
 Gills not decurrent.
 Margin of pileus at first incurved 30. *Psilocybe*. 147
 Margin of pileus at first straight 31. *Psathyra*. 148
- V. Spores black, or nearly so.—*Coprinarii*.
 Gills deliquescent ii. COPRINUS. 160
 Gills not deliquescent.
 Gills decurrent viii. GOMPHIDIUS. 20
 Gills not decurrent.
 Pileus striate 34. *Psathyrella*. 148
 Pileus not striate 33. *Panaeolus*. 158

Genus 1. **AGARICUS**, Linn. Syst. Nat. (1735).

Spores of various colours; gills membranaceous, persistent, with an acute edge; trama floccose, confluent with the inferior hymenium. Fleshy fungi, putrifying, and not reviving when once dried, hence differing from such genera as are deliquescent, coriaceous, or woody.

This genus is divided into five series, according to the colour of the spores, the subgenera in each series are arranged in the accompanying plates. Each series consists typically of three groups.

- 1.—Hymenophore distinct from the fleshy stem.
- 2.—Hymenophore confluent and homogenous with the fleshy stem.
- 3.—Hymenophore confluent with, but heterogenous from, the cartilaginous stem.

These three groups are kept distinct in the plates, the subgenera in each series corresponding in position with its analogues in the other series.

Series 1. **Leucospori.** Spores white (Plate ii).

The species bearing white spores seem higher in type than those producing coloured spores. Most of the former are firm, and many persistent, whilst, as we approach the black-spored Agarics, there is a greater tendency to deliquesce. The spores of the *Leucospori* are mostly oval, sometimes nearly round, generally very regular, but sometimes spinulose. They vary in size; and, while containing the largest as well as the smallest known spores, are as a rule *small*, generally white, but sometimes dingy, or with a suggestion of yellow, or pink. As a rule, none of the *Leucospori* grow on dung or in rank places, whilst in the darker and black-spored groups these habitats are the rule.—*W. G. S.*

Sub-Gen. 1. **AMANITA.** Pers. Syn., p. 246.

Veil universal at first, completely enveloping the young plant, distinct and free from the cuticle of the pileus; pileus convex, then expanded, not decidedly fleshy; stem distinct from the hymenophore, ringed or ringless, furnished with a volva, free and lax, connate with the base, or friable and nearly obsolete; gills free from the stem.—**HAB.** On the ground, mostly in woods and uncultivated places.—(*Pl. II.*, fig. 1, *A. muscarius*.)

This subgenus is remarkable for the great development of the veil, which at first entirely envelopes the young plant in a thick clothly wrapper; as the fungus reaches maturity the veil is ruptured, and part remains in scattered patches on the pileus (B), whilst part forms a more or less complete cup or volva at the base (C); when there are no fragments on the pileus the veil has been ruptured in one place, and the whole mass remains at the base; this is often the case in *Agaricus phalloides* Fr. Some of the species have the stem furnished with a ring (D), which is part of the veil, whilst three species are ringless (or more properly, *the ring is adherent to the stem*). In some species the veil is thick, and greatly developed, whilst in others it is thin and friable, and both volva and patches are evanescent; the higher forms of *Amanita* stand alone, from the stem being furnished with a *volva* and *ring*. Some of the species are edible, others highly poisonous.—*W. G. S.*

Sect. 1. *Vaginatae*—ring obsolete.

1. **Agaricus (Amanita) vaginatus.** Bull. "Sleek Amanita."

Pileus thin, campanulate, then nearly plane, margin membranaceous, deeply sulcate; stem fistulose, attenuated, fragile, flocculoso-squamose; volva sheathing, loose; gills free, white, then pallid.—*Berk. Outl. t. iii, fig. 4. Eng. Fl. v. p. 2. Huss. ii. t. 34. Bull. t. 98, 512. Vitt. Mang. t. 16. Lenz. f. 2. Kromb. t. 1, f. 1-5, t. 10, f. 6-9, t. 30, f. 13-14. Fl. Dan. t. 1014, 2142, f. 2. Gard. Chron. (1861), p. 97. Gonn. & Rabh. i. t. 7, f. 1. Barla. t. 5. Vent. t. 5.*

Var. albida. A. nivalis, Grev. t. 18. Eng. Fl. v. p. 3. Paul. t. 151, f. 1-2.

In woods and under trees. Common. [United States.]

Variable in size and colour. Pileus 4 in. or more, viscid when moist, shining when dry, at first there are a few broad scales, but these soon vanish; the cuticle easily peels off. Stem 6 in. or more high, $\frac{1}{2}$ -1 in. thick, attenuated upwards, obtuse at the base, where it is furnished with a volva, which is adnate for about an inch, and then, in general, closely surrounding it like a sheath, but sometimes the margin is expanded. The volva is easily overlooked if care be not taken to dig up the very base of the stem. Gills free, ventricose, broadest in front, often imbricated, white. Smell scarcely any.—*Eng. Fl.* Spores spherical 00032×00038 in.—*W. G. S.*

2. Agaricus (Amanita) Cecilæ. *B. & Br.* "Grey ringless Amanita."

Pileus at first ovate, then campanulate, clothed with scattered subpersistent warts; margin grooved; stem stuffed, silky above, squamulose below; volva soon breaking up.—*B. & Br. Ann. N.H. no. 663. Berk. Outl. t. 3, f. 5. Fr. Icon. t. 11? Price f. 112.*

In woods. Aug. Sept. Common in Epping Forest.

Colour mouse-grey. Distinguished by its less perfect volva and stuffed stem, which does not simply contain a few cottony fibres, as that of *A. vaginatus*. Pileus at first semi-elliptic, densely and uniformly clothed with the thick mouse-coloured volva, which at length splits irregularly below from a slight prominence at the base of the stem, but by no means vaginate; then campanulate, obtuse, 3-4 in. across, margin sulcate, dingy yellow, either quite smooth, or more or less clothed with the depressed or even acutely warty remains of the volva. Stem 4 in. or more high, $\frac{3}{4}$ in. thick, attenuated upwards, above silky, transversely or obliquely rimose, below squamulose from fragments of the volva, spongy within, with occasional cavities, not truly bulbous; ring none gills thick, sometimes forked or anastomosing, the shorter ones abruptly truncate behind, quite free, at length remote, interstices venous. Smell none. Taste sweet.—*M. J. B.* Spores oval 00034×0006 in.—*W. G. S.*

3. Agaricus (Amanita) adnatus. *Smith.* "Adnate gilled Amanita."

Pileus fleshy, firm, smooth, rather moist, convex, then expanded, buff beneath the cuticle; margin extending beyond the gills; stem stuffed, at length hollow, pale buff, rough, fibrillose; ring none; volva lax, adnate, or almost obsolete, white, pubescent, remaining in woolly patches on the pileus; gills white, crowded, truly adnate. *Saund. & Sm. t. 20.*

Woody places, amongst oak and holly. Kingsdon Wood and Alfoxen, Combe, amongst the Quantock Hills, Somerset.—(*J. A. C.*)

Pileus fleshy, very firm, not brittle, smooth, rather moist, pale buff-yellow, $2\frac{1}{2}$ -3 in. across, margin exceeding the gills; gills white, crowded, truly adnate; stem stuffed, at length hollow, pale buff, rough, and fibrillose, 2-4 in. high; ring absent; volva lax, adnate, or almost obsolete, white and pubescent, remaining in woolly masses on the pileus; flesh firm, almost rigid, as in *Russula*, white, stained sienna-buff under the cuticle of the pileus; spores slightly oval, 0004×0003 in.—*W. G. S.*

Sect. 2. Phalloideæ—volva free and lax.

4. Agaricus (Amanita) vernus. Bull. "Spring Amanita."

Pileus at first ovate, then expanded, rather depressed, viscid, white; margin naked, smooth; stem stuffed, equal, floccose, base bulbous; volva closely embracing the stem with its free margin; ring reflexed; gills free.—*Bull. t. 108. Vitt. Mang. t. 44. Paul. t. 156, f. 3-4. Smith P. M. f. 8. Price f. 3. Gard. Chron. (1861), p. 480, fig.*

In woods. Early summer. Poisonous.

Altogether white. Distinguished from white forms of *A. phalloides* by its closer sheathing volva, and more ovate pileus when young, and from the white forms of *A. vaginatus* by the presence of a ring.

5. Agaricus (Amanita) phalloides. Fr. "Stinking Amanita."

Pileus campanulate, then expanded, obtuse, viscid; margin even, regular; stem hollow above, attenuated; volva bulbous, free above, loose; ring membranaceous; gills rounded, ventricose.—*Sys. Myc. i. p. 13. Epicr. p. 4. Vaill. t. 14, f. 5. Paul. t. 155, 156, f. 1-2. Berk. Outl. pl. 3, f. 1. (right figure.) Smith. P. M. f. 7. Eng. Fl. v. p. 1. Kromb. t. 28, f. 1-10. Corda Sturm t. 55. Price f. 28. Barla, t. 4. Gonn. & Rabh. i. t. 10, f. 1. Vent. t. 40. A. bulbosus, Bull. t. 2. A. vernalis, Bolt. t. 48. A. verrucosus, Fl. Lond. t. 312; f. 4-5.*

Woods, and their borders. Aug.—Nov. Common.

[Pennsylvania.]

Pileus 2-3 in. broad, irregularly scaly from the fragments of the volva adhering to the surface, variously coloured, white, straw-coloured, brownish, greenish, &c. Stem 3-4 in. high, $\frac{1}{2}$ in. thick, fibrillose, attenuated upwards, bulbous below. Volva adnate at the base, with the margin free, more or less expanded. Odour powerful, and fœtid, especially as it decays. Considered poisonous. Spores spherical $\cdot 0003$ in.—*W. G. S.*

6. Agaricus (Amanita) mappa. Batsch. "Delicate Amanita."

Pileus convex, then plane, without separable cuticle, margin nearly even; flesh white; stem stuffed, then hollow, cylindrical, nearly smooth, bulbous, nearly globose at the base; volva with its free margin acute and narrow; ring membranaceous; gills adnexed.—*Fr. Epicr. p. 6. Gonn. & Rabh. i. t. 11, f. 1. Paul. t. 158, f. 1-2. Vitt. Mang. t. 11. Kromb. t. 1, f. 6, t. 28, f. 11-12. Ann. N. H. no. 138. Price f. 66. Vent. 40, f. 1-2. A. bulbosus, Bull. t. 577, F. D. G. H. M. A. venenosa, Pers. Com. t. 2. Schæff. t. 241. Sow. t. 286 (left figure.) Curtis t. 312 (right figure.)*

Under trees. Not common. Poisonous.

Colour variable. Habit like that of a small *A. phalloides*, from which it is distinguished by its less developed volva, which, instead of being cup-shaped, is little more than a mere rim fringing the bulb.—*M. J. B.*

Sect. 3. Muscaria—volva cut round, lower part connate with the stem.

7. *Agaricus (Amanita) muscarius.* L. "Fly Amanita."

Pileus convex, then expanded, clothed with scattered warts, the remains of the volva, margin striate, flesh beneath the viscid cuticle yellowish; stem stuffed, bulbous at the base; volva adnate, concentric, scaly; ring lax, deflexed; gills reaching the stem and forming decurrent lines upon it.—*Grev. t. 54. Eng. Fl. v. p. 4. Huss. i. t. 1. Gard. Chron. (1860), p. 169. Kromb, t. 9, f. 1-19. Corda Sturm t. 54. Price f. 56. Barla. t. 2. Vent. t. 1, f. 3-4. Sow. t. 286 (right fig.) Smith, P.M.f. 13. Cooke, B. F. t. 1. Gonn. & Rabh. i. t. 6.*

Woods, especially fir and birch. Aug.—Nov. Poisonous.

[Pennsylvania.] *Y. J. B.*

Pileus 3-7 in. broad, orange, scarlet, sometimes brownish, beset with superficial conical warts, viscid when moist, margin thin and striate. Gills white, broad, ventricose, free or slightly adnexed. Stem 4-9 in. high, $\frac{1}{2}$ -1 in. thick, stuffed with cottony fibres, sometimes hollow. Bulb covered with close conical scales, the remains of the volva. Highly narcotic, producing intoxication, delirium, and death. Spores '00032 \times '00025 in.—*W. G. S. (Pl. II., fig. 1.)*

8. *Agaricus (Amanita) excelsus.* Fr. "Tall Amanita."

Pileus convex, then plane, at first innato-fibrillose, clothed with irregular, mealy, evanescent warts; margin nearly even; flesh white; stem stuffed, cylindrical, scaly below, bulbous, immarginate; volva evanescent; gills ventricose, free, rounded behind.—*Fr. Epicr. p. 8. Berk. Outl. pl. 3, f. 3. Eng. Fl. v. p. 5. Kromb. t. 29, f. 14-17. Paul. t. 159. Gonn. & Rabh. i. t. 8, f. 1.*

In woods. Quality doubtful.

[Carolina, U.S.]

Colour brownish. Margin sometimes sulcate. Pileus 4 in. broad, slightly viscid, smooth, with a few more or less conical irregular scattered warts, easily rubbed off; cuticle tough and clammy, easily peeling off; gills obtuse before and behind, but broader in front, truly free, half an inch broad, the margin slightly uneven. Stem 6 in. or more high, 1 in. thick, going deep into the earth, scaly below the ring, scales thick and squarrose, above the ring the scales are closely adpressed, their interstices finely silky, apex striate, tolerably firm, juicy, white; ring half way down, large, substriate within, externally downy. Taste pleasant.—*M. J. B.* Spores '0003 \times '00022 in.—*W. G. S.*

9. **Agaricus (Amanita) pantherinus.** D.C. "Spotted Amanita."

Pileus convex, then expanded, margin striate, flesh under the viscid pellicle white; stem stuffed, then hollow, nearly smooth; volva at the base ocreate, with the margin entire, obtuse, and free; gills attenuated, free.—*Fr. Epicr. p. 5. Eng. Fl. v. p. 4. Fl. Dan. t. 1911, f. 2. Vitt. Mang. t. 39. Vent. t. 3. Kromb. t. 29, f. 10-13. Paul. t. 160, f. 2. Schæff. t. 90. Barla. t. 7, f. 1-3. Roques. t. 21, f. 2-3. Gonn. & Rabh. i. t. 1.*

In woods or pastures near trees.

[Pennsylvania.]

Brownish, not red or reddish brown, as in *A. muscarius*. Pileus, 4 in. broad, with flat, mealy warts, which rub off with difficulty, glutinous when moist; when dry, soft to the touch like kid leather. Stem 5 in. high, half an inch thick, stuffed, then more or less hollow, silky, and even, or torn into reflexed scales; ring deflexed; volva quite smooth, connate, the extreme margin only free all round.—*M. J. B.* Not poisonous. Spores, 0003×00019 in.—*W. G. S.*

10. **Agaricus (Amanita) strobiliformis.** Fr. "Fir-cone Amanita."

Pileus convex, then expanded, with persistent warts; margin even; flesh compact, white; stem solid, floccoso-squamose, bulbous, base subterraneous; volva with the margin acute, concentric; ring torn; gills rounded behind, and free.—*Epicr. p. 5. Vitt. Mang. t. 9. Vent. t. 4. Paul. t. 162. Bull. t. 593. Berk. Outl. t. 3, f. 2. Smith E. M. f. 10. Gonn. & Rabh. i. t. 7, f. 3. Ann. N.H. no. 662.*

Borders of woods. Rare. Esculent.

Pileus when young subglobose, bulb of the stem conical below, rooting, its border sometimes incised all round, sometimes even, floccose above to the edge of the pileus; scales of pileus large, wart-like, with a brown disc, and white floccose border, persistent, angular. Pileus, when expanded, 8-9 in. across, at length quite smooth, margin extending beyond the gills, white, cinereous, &c. Stem 6-7 in. high, $1\frac{1}{2}$ in. thick, firm, solid, bulb not properly scaly, veil large; gills rounded behind, the shorter ones denticulate at the base. Odour and taste pleasant.—*M. J. B.*—"It attains a very large size in well-grown specimens. The persistent patches on the top are not unlike the scales of a fir-cone, hence its specific name; the gills do not reach the stem. Average size of spores, 00054×00035 in."—*W. G. S.*

Sect. 4. Validæ—volva thin and friable.

11. **Agaricus (Amanita) rubescens.** P. "Reddish Amanita."

Pileus convex, then expanded; warts unequal, mealy, scattered; flesh becoming reddish; stem stuffed, attenuated upwards, squamulose; ring entire; gills attenuated, reaching the stem and form-

ing decurrent lines upon it ; volva obliterated.—*Fr. Epicr. p. 7. Eng. Fl. v. p. 5. Vent. t. 26, f. 1-3. Kromb. t. 10, f. 1-5. Letell. t. 677. Trans. Woolh. C. (1868). Gonn. & Rabh. i. t. 5. Price, f. 75. Huss. i. t. 23. Vitt. Mang., t. 41. Schæff. t. 91-261. Paul. t. 161. Curt. Fl. L. t. 312, partly. Hogg & Johnst. t. 1. Smith, E. M. f. 1. Badh. i. t. 12, f. 1, ii. t. 11, f. 3-5.*

In woods. Common. Esculent. [United States.]

Margin of pileus in some instances with the appearance of striæ ; flesh turning reddish when cut or bruised ; gills broad in front, narrowed behind ; stem above the ring clothed with flat adpressed scales, below the ring the scales have their upper margin free and patent. Smell strong, taste not unpleasant. Spores $\cdot 0003 \times \cdot 00023$ in.—*W. G. S.*

12. Agaricus (Amanita) spissus. Fr. "Clammy Amanita."

Pileus convex, then plane, rough with minute, adnate, mealy warts ; margin smooth ; flesh firm, white, unchangeable ; stem stuffed, firm, attenuated upwards, squamulose ; ring entire ; gills adnexed, with decurrent lines on the stem.—*Fr. Epicr. p. 9. Curr. Linn. Trans. xxiv., p. 151. Kromb. t. 1, f. 7, t. 29, f. 1-5.*

In woods.

Pileus 3 in. broad, umber with a greyish tinge, evidently viscid, smooth, with a few patches of the volva adhering, not in the form of warts, but irregularly ; epidermis tough and clammy, easily peeling off, margin not striate ; gills very broad, more than half in., ventricose and adnexed. Stem 3 in. high, 1 in. being buried in the ground, swollen and bulbous at the surface, narrower above and below. Ring deflexed and striate. Spores white, irregularly pear-shaped or balloon shaped, with a short stalk, colourless, about $\cdot 0005$ in. long.—*F. Curr.*

13. Agaricus (Amanita) asper. Fr. "Rough Amanita."

Pileus convex, then plane ; warts minute, crowded, nearly persistent ; margin even ; flesh compact, brownish beneath the cuticle ; stem stuffed, then hollow, attenuated ; ring entire, distant ; gills rounded behind, free.—*Fr. Epicr. p. 9. Eng. Fl. v. p. 6. Vitt. Mang. t. 43. Bolt. t. 139. Bull. t. 316.*

In woods. June.—Oct. [Carolina, U.S.]

In many respects resembling *A. rubescens*. Pileus 2-3 in. broad, scarcely umbonate, reddish, with various tints of livid and grey, clothed with small acute warts ; flesh thick, permanent white, except immediately beneath the epidermis ; gills white, broad in front, with sometimes a little tooth behind running down the stem ; stem 2-3 in. high, sometimes $1\frac{1}{2}$ in. thick at the base, often less, bulb rather rough, striate above the ring, silky below ; ring broad, striate. Odour strong, taste not unpleasant.—*M. J. B.* Spores $\cdot 00032 \times \cdot 00026$ in.—*W. G. S.*

14. Agaricus (Amanita) megalodactylus. B. "Strong-scented Amanita."

Strong scented. Pileus soft, convex, smooth, reddish-grey; cuticle entire; margin even; stem somewhat bulbous, solid, fibrillose; ring very large, placed near the top of the stem; gills moderately broad, free, pallid, at length tinged with red.—*Berk. Outl.* p. 91.

In a wood near Stamford.

Pileus $3\frac{1}{2}$ in. across; stem 5 in. high. The volva is almost obsolete, it is allied to *A. lenticularis*, but the solid stem is not squamulose, and the gills do not assume an olive tint.—*M. J. B.*

Sect. 5. Denudatæ—veil entirely obsolete.

15. Agaricus (Amanita) lenticularis. Lasch. "Smooth Amanita."

Pileus globose, then convexo-plane, soft, smooth, margin even; stem stuffed, bulbous, squamulose; ring broad above; gills free, becoming pallid.—*Lasch. Linn. no. 18. Paul. p. 306, t. 149. B. & Br. Ann. N.H. (1866), no. 1104. Fr. Icon. t. 13.*

In plantations. Oct. Coed Coch.

Remarkable for the great development of the ring, and the smooth pinkish tan pileus. Stem 4-6 in. long. Pileus 3-4 in. broad. Flesh soft, spongy, white, with a mouldy odour. Gills free, approximate, ventricose, broader behind, very much crowded, white.

Sub-Gen. 2. LEPIOTA. Fr. S.M., i. p. 19.



Fig. 35.

Veil universal and concrete, with the cuticle of the pileus breaking up in the form of scales (F); pileus never compact, often very thin, the flesh always soft and threadlike, and not only distinct from the stem, but often separated above into a peculiar cup; stem distinct from the hymenophore, generally hollow, full of threadlike fibres, rather sub-cartilaginous than fleshy, different in texture from the flesh of the pileus, hence it is easily removed, leaving a cup or socket at its point of juncture with the pileus (E), furnished with an annulus, which is at first continuous with the cuticle of the pileus, often moveable, sometimes evanescent; volva none; gills free; hence not sinuate or decurrent.

HAB. On the ground, mostly in rich grassy places, and more often in fields than woods.—(*Pl. II., fig. 2, Ag. procerus.*)

Several species as *A. clypeolarius*, Bull., *A. cepæstipes*, Sow., and *A. cristatus*, Fr., appear in hothouses all the year round. *Lepiota* is readily recognised by its *free gills*, annulated stem *without a volva*, and generally scaly pileus. Usually autumnal and edible.—*W. G. S.*

Sect. 1. Proceri.—ring moveable.

16. *Agaricus (Lepiota) procerus.* Scop. “Parasol Mushroom.”

Pileus fleshy, soft, at first ovate, then expanded and umbonate; cuticle thick, torn up into broad scales; stem hollow, tall, bulbous, variegated with adpressed scales; ring moveable; gills very remote.—*Fr. Epicr. p. 12. Eng. Fl. v. p. 7. Trans. Woolh. C., 1867. Badh. t. 2. Barla. t. 8. Schæff. t. 22-23. Fl. Dan. t. 772. Curt. Fl. L. t. 69. Vitt. Mang. t. 24. Price f. 74. Lenz. f. 5-6. Vent. t. 6. Paul. t. 135. Hogg & Johnst. t. 8. Cooke, B. F. t. 2. Huss. i. t. 88. Smith E. M. f. 14. Kromb. t. 24, f. 1-12.*

Pastures. Common. Esculent. [Pennsylvania.]

Pileus 3-7 in. broad, at first obtusely conic, at length campanulate, strongly umbonate, fleshy, cuticle velvety, red brown, broken into sub-reflexed scales, the whole resembling brown shaggy leather, margin white, or pinkish, silky, flesh soft, and cottony, except in the centre, when young. Gills perfectly free, separated by a considerable space from the stem, ventricose, margin serrated, pale, pinkish yellow, or white. Stem, 8-12 in. high, $\frac{1}{2}$ in. thick, attenuated upwards, sunk deep into the flesh of the pileus, bulbous, scaly, hollow, but stuffed with a cottony web. Ring coriaceous, thick and spongy, convex below, moveable. Taste and smell pleasant.—*M. J. B.* Spores $\cdot 0006 \times \cdot 0003$ in.—*W. G. S.* (Pl. ii., fig. 2 and fig. 35.)

17. *Agaricus (Lepiota) rachodes.* Vitt. “Large grey *Lepiota*.”

Pileus fleshy, soft, at first globose, then expanded and depressed; cuticle thin, broken into persistent scales, stem hollow, attenuated, smooth, immaculate, bulb at first abrupt; ring lacerated, moveable; gills remote.—*Fr. Epicr. p. 13. Berk. Outl. pl. 3, f. 6. Price, f. 104. Huss. ii. t. 58. Vitt. Mang. t. 20. Ann. N.H. no. 257. Gard. Chron., 1861, p. 599. Kromb. t. 24, f. 15-16.*

In shady pastures. Not common. Esculent. [Carolina, U.S.]

Flesh mostly red when bruised. Closely allied to *A. procerus*, from which it is distinguishable by the pileus being more globose when young, by the generally distinctly marginate bulb, and the stem being free, or nearly free, from the spots which give *A. procerus* a snake-like appearance.—*Gard. Chron.* Spores $\cdot 00018 \times \cdot 00025$ in.—*W. G. S.*

18. *Agaricus (Lepiota) excoriatus.* Schæff. "Flaky Lepiota."

Pileus fleshy, soft, obscurely umbonate; cuticle thin, breaking up into scales; stem hollow, short, cylindrical, scarcely bulbous, smooth, white; ring moveable; gills rather remote.—*Schæff. t. 18-19. Eng. Fl. v. p. 7. Vitt. Mang. t. 35. Krombh. t. 1, f. 9, t. 24, f. 24-30, Vent. t. 7. Paul. t. 135 bis. Letell. t. 609, f. A. B.*

In pastures. May—Sept. Esculent.

Pileus $2\frac{1}{2}$ in. across, expanded, often a little irregular, carnose, umbonate, flesh spongy, cuticle cracked into small areolæ, silky between them, especially on the margin, pale fawn, the umbo dark, gills ventricose, free, so as to leave a broad space round the top of the stem, which is sunk into the substance of the pileus, dull white, slightly watery, unbricate when old, sometimes broader on one side of the pileus than the other, and sometimes stained with claret colored blotches. Stem $1\frac{1}{2}$ -2 in. high, $\frac{1}{4}$ - $\frac{1}{2}$ in. thick, attenuated regularly upwards, without a decided bulb, minutely fibrillose, hollow, but stuffed with a cottony web. Ring deflexed, moveable. Smell scarcely any.—*M. J. B.* Spores 0005×00035 in.—*W. G. S.*

19. *Agaricus (Lepiota) gracilentus.* Krombh. "Slender Lepiota."

Pileus rather fleshy, campanulate, then expanded, obtusely umbonate; cuticle thin, breaking up into adpressed persistent patches; stem hollow, elongated, slightly bulbous; ring thin, free, evanescent; gills remote, broad, pallid.—*Kromb. t. 24, f. 13-14. Berk. Out. p. 93.*

In pastures. Esculent.

Resembling *A. procerus* but more delicate. Stem 5-6 in. long, 4-5 lin. thick, obsolete scaly. Pileus at first ovate, then campanulate, and at length flattened, spotted with brownish scales. Spores 00043×0003 in.—*W. G. S.*

20. *Agaricus (Lepiota) mastoideus.* Fr. "Bossed Lepiota."

Pileus rather fleshy, soft, ovate, then expanded, and acutely umbonate; cuticle thin, breaking up into scattered papillæ; stem hollow, equally attenuated from the bulb, weak, smooth; ring entire, moveable; gills very remote, pallid.—*Epicr. p. 14. Fl. Dan. t. 2144. Berk. Mag. Zool. & Bot. i. t. 2, f. 1. Kromb. t. 24, f. 17-18. Batt. t. 10, f. A. Letell. t. 609, f. D. E.*

In woods. Oct. King's Cliffe.

[Cincinnati.]

Pileus $1\frac{3}{4}$ in. across, $\frac{3}{4}$ in. high, very strongly umbonate, with a depression round the umbo, sub-carnose, epidermis breaking up into small umber papillæ, which are larger and more scattered towards the margin; gills remote, rather narrow, yellowish; stem $3\frac{1}{2}$ in. high, slender, strongly attenuated upwards, incrassated at the base, sunk into the substance of the pileus, minutely villosa-squamose, filled within with cottony fibres. Ring deflexed, scarcely moveable.—*M. J. B.*

Sect. 2. Clypeolarii.—pileus shield-like.

21. Agaricus (Lepiota) acutesquamosus. *Wm.* "Squarrose Lepiota."

Pileus fleshy, obtuse, at first floccose, then bristly with erect, acute, squarrose scales; stem somewhat stuffed, bulbous, below the ring rough or silky, pruinose above; gills approximate, lanceolate, simple.—*Huss. ii. t. 5. Kromb. t. i. f. 18-20, t. 29 f. 18-21. A. Marieæ. Klotsch. Linnæa vii. t. 8. Berk. Eng. Fl. v. p. 4. Ann. N.H. no. 139.*

On soil in gardens, and in greenhouses. [Cincinnati.]

Generally tawny. Pileus 2-3 in. broad, with dark coloured scales. Stem tawny, pruinose 2-3 in. long or more, 4 lines to $\frac{1}{2}$ in. thick. Ring white. Substance fleshy, tough, elastic, white. Spores '0001 \times '00023 in.—*W.G.S.*

[AGARICUS (LEPIOTA) FRIESII. *Lasch.* recorded by B. & Br. *Ann. N.H.* (1866) No. 1105 was entered in error.]

22. Agaricus (Lepiota) hispidus. *Lasch.* "Hispid Lepiota."

Pileus fleshy, thin, umbonate, at first tomentose, then breaking up into squamose papillæ. Stem fibrillose, stuffed, thin, attenuated, above the ring floccoso-squamose; gills approximate, ventricose, simple.—*Linnæa 1829, no. 407. Ann. N.H. no. 901. Fr. Icon. t. 14, f. 1.*

In shady woods, amongst pine leaves. Aug.

Stem about 3 in. long, 3-5 lines thick. Pileus 2-3 in. broad, umber. Smell like that of *Lactarius theiogalus*.

23. Agaricus (Lepiota) Badhami. *B. & Br.* "Saffron Lepiota."

Pileus at first campanulate, obtuse, then expanded, or depressed and umbonate, hispid with minute, velvety, ermine-like scales; stem bulbous, white, silky, stuffed with cottony threads; ring firm, slightly moveable; gills remote, ventricose; whole plant when wounded of a saffron-red. *Ann. N.H. no. 664. Berk. Out. p. 93.*

Under yew trees. Sept. Apethorpe. Norths.

Pileus 2-4 in. across, at first campanulate, obtuse, at length expanded. often depressed and umbonate, hispid, with minute, velvety, fuliginous scales, but sometimes entirely fuliginous, without any distinct scales; stem 2-3 in. high, $\frac{1}{4}$ - $\frac{1}{2}$ in. thick, attenuated above, bulbous below, white, silky, or floccoso-squamose, stuffed with cottony threads; ring firm, erect, and deflexed, more or less moveable, beneath, frequently clothed with dingy granules; gills truly remote, ventricose, rather broad. Spores elliptic, '0003 in. long, flesh tolerably compact. The whole plant when wounded assumes a rich red tint. Smell rather disagreeable.—*M. J. B.*

24. Agaricus (Lepiota) meleagris. Sow. "Sowerby's Lepiota."

Pileus fleshy, thin, convex, then plane; cuticle broken up into black scales; flesh turning red; stem solid, squamulose, thickened downwards, and black; root reticulated; gills nearly free.—Sow. *t.* 171. *Berk. Outl. p.* 101, *no.* 50 (sub. *Tricholoma*) *B. & Br. Ann. N.H.* 1865. *Eng. Fl. v. p.* 9.

On hot-beds. May—Oct.

"It has a solid stem, and a curious, somewhat reticulated root, in drying it becomes of a bluish-red all over, except the lower part, which retains the darker hue"—Sow. Stem about 3 in. long, $\frac{1}{4}$ in. thick, nearly equal, pileus $1\frac{1}{2}$ in. broad. Stem stouter in proportion than in *A. clypeolarius*.

25. Agaricus (Lepiota) clypeolarius. Bull. "Fragrant Lepiota."

Pileus fleshy, soft, umbonate, at first with an even crust, at length broken into floccose adpressed scales; stem fistulose, thin, almost equal; ring evanescent, floccoso-squamose; gills free, approximate.—Bull. *t.* 405. 506, *f.* 2. *Tratt. Aust. t.* 26. *Paul. t.* 136. *Eng. Fl. v. p.* 8. *Fr. Icon. t.* 14, *f.* 2. *Berk. Out. p.* 94. *Vent. t.* 44, *f.* 3-4.

In woods and hot-houses.

[United States.]

Sweet scented. Variable in colour, white, yellow, pink, rufous, brown, &c. Pileus $1\frac{1}{2}$ in. broad, sub-campanulate, strongly umbonate, whitish, with reddish scales; gills numerous, quite free, nearly reaching the stem, ventricose; stem $2-3\frac{1}{2}$ in. high, 2 lines thick, hollow, but stuffed with cottony fibres, whitish, pale brownish, or rufescent; the whole clothed with fibrillose scales. Ring sometimes remaining on the stem, but generally attached to the margin of the pileus, or evanescent. Inodorous and insipid.—*M. J. B.*

26. Agaricus (Lepiota) cristatus. Fr. "Stinking Lepiota."

Pileus slightly fleshy, rather obtuse, cuticle at first continuous, naked, then broken into sub-granulose scales. Stem fistulose, slender, even, equal; ring entire, evanescent; gills free, at length remote.—Fr. *Epicr. p.* 15. *Batsch. f.* 205. *Price f.* 105. *Grev. t.* 176. *Krombh. t.* 25, *f.* 26-30. *Berk. Outl. pl.* 3 *f.* 7. *Eng. Fl. v. p.* 9. *Huss. i. t.* 48. *Berk. Exs. no.* 1.

In fields, lawns, &c. Common.

[United States.]

Pretty, and remarkable for its strong scent. Solitary or subgregarious. Pileus $\frac{1}{2}-1\frac{1}{2}$ in. broad, expanded, umbonate, white, the cuticle broken into rufescent scales, which are either flat or reflexed, less frequent on the margin, ring sometimes attached in fragments to the margin, sometimes moveable on the stem, flesh firm, thin; gills remote, numerous, slightly ventricose, the margin uneven, often imbricated, tinged slightly with yellow. Stem 1-2 in. high, 1-2 lines thick, tough, composed of fibres, smooth or fibrillose, hollow but with a few cottony fibres, flesh towards the base reddish, with a rooting mass of branched fibres. Spores white, elliptic. Smell and taste strong and unpleasant.—*M. J. B.*

Sect. 3. *Annulosi*—ring fixed.

- 27. Agaricus (*Lepiota*) vittadini.** *Moretti*. "Great white *Lepiota*."

Pileus fleshy, obtuse, rough with strong wart-like scales; stem solid, cylindrical, stout, concentrically squarrose; ring large; gills free, ventricose, thick.—*Moret. Bot. Ital. t. 1. Vitt. Am. t. 1. Krombh. t. 276, f. 1-14. Huss. i. t. 85.*

In pastures. Rare. Norfolk, Northamptonshire, Hunts, &c.

A large species of a pure white; extremely beautiful. Considered poisonous.

- 28. Agaricus (*Lepiota*) holosericeus.** *Fr.* "Silky *Lepiota*."

Pileus fleshy, obtuse, soft, silky fibrillose, becoming even; stem solid, bulbous, sericeo-fibrillose, ring superior, persistent, broad, reflexed; gills free, ventricose, white, growing pallid.—*Fr. Epicr. p. 16. Smith Seem. Journ. 1868.*

In moist woods. Staplehurst, Kent. Esculent.

Large, inodorous. Pileus fleshy, soft, smooth, convex, then expanded, disc never umbonate, of a floccose silky texture, fragile, entirely uniform in colour, 3 in. or more broad, gills free, broad, ventricose, crowded, pallid; stem solid $2\frac{1}{2}$ -4 in. high, $\frac{1}{2}$ in. or more thick, bulbous at the base, soft, fragile, silky fibrous; ring superior, membranaceous, broad, soft, pendulous and reflexed. Spores 0003×0002 in.—*W. G. S.*

- 29. Agaricus (*Lepiota*) naucinus.** *Fr.* "Large spored *Lepiota*."

Pileus fleshy, soft, cuticle thin, entire, or breaking up into granules, somewhat umbonate and smooth in the centre; stem almost hollow, thickened at the base, attenuated upwards, fibrillose; ring large, at length evanescent; gills approximate, whitish.—*Fr. Epicr. p. 16. Krombh. t. 24, f. 20-23. Paul. t. 150, f. 1-2. Batt. t. 7-9. Vent. t. 48, f. 5-6.*

In fields.

Delicate tan color, the gills at length assuming a dirty pink hue. The large white spores are very characteristic. Easily confounded with *A. cretaceus*.

- 30. Agaricus (*Lepiota*) cepæstipes.** *Sow.* "Onion stemmed *Lepiota*."

Pileus sub-membranaceous, ovate, then expanded, mealy and scaly, disc fleshy and broadly umbonate; margin plicate; stem hollow, floccose, thickest in the middle, or at the base; ring evanescent; gills at length remote.—*Sow. t. 2. Grev. t. 333. Sturm. t. 1. Fl. Dan. t. 1798. Eng. Fl. v. p. 7. Gard. Chron., 1860, p. 47.*

On tan and eaves in hot-houses.

White or yellow, stem variable. Gregarious or tufted. Pileus 1-3 in. broad, ovate conical when young, then campanulate, and finally nearly or quite plane, darkest in the centre, and more or less covered with small scattered fibrous scales, flesh thin, margin very thin, and semitransparent, plicate, substance tough. Gills numerous, thin, broad, rounded near the stem, and separated from it by a circular space, but the stem is not penetrating. Stem 3-6 in. high, straight or crooked, firm, even, smooth, narrow at the top, ventricose, then narrower at the bottom, somewhat pruinose, the centre at first stuffed, then hollow. Ring perfect, erect, persistent. In decay the pileus becomes brownish.—*Grev.* Spores $\cdot 0003 \times \cdot 00018$ in.—*W. G. S.*

Sect. 4. Mesomorphi—intermediate forms.

31. Agaricus (*Lepiota*) *granulosus*. Batsch. "Granular *Lepiota*."

Pileus fleshy, convex, then expanded, soft, mealy with innate granules, stem stuffed, then hollow, nearly equal, floccoso-squamose below the ring; gills crowded, reaching the stem, or free, white.—*Fr. Epicr. p. 17. Eng. Fl. v. p. 10. Sow. t. 19. Bull. t. 362, 530, f. 3, t. 104. Huss. i. t. 45. Batsch. f. 24-97. Fl. Dan. t. 1677, f. 1, t. 1795. Bolt. t. 51, f. 2.*

In woods and on heaths.

[United States.]

White, pink, vermilion, yellow, &c. Always easily distinguished by its mealy granular aspect. Subgregarious. Pileus $\frac{1}{2}$ -1 in. broad, usually dull reddish yellow. Fleshy in the centre, at first convex, or obtusely umbonate, at length often plane or depressed, somewhat wrinkled, covered with furfuraceous scales. Gills white, or yellowish white, fixed to the stem, ventricose and sometimes nearly free. Stem 1-3 in. high, 1-4 lines thick, slightly incrassated at the base, solid when young, becoming hollow with age, stuffed at the base, sometimes slightly compressed, with a subfugacious flocculose ring about the middle, above which it is slightly fibrillose, beneath it scaly like the pileus.—*M. J. B.* Spores $\cdot 00012 \times \cdot 00015$ in.—*W. G. S.*

It is the variety *Amianthinus*, which is found in this country.

32. Agaricus (*Lepiota*) *polystictus*. Berk. "Little brown *Lepiota*."

Inodorous, fleshy; cuticle continuous, or broken into scales; stem attenuated downwards, stuffed with cottony threads, scaly below the fugacious ring, silky above; gills crowded, rounded before and behind, free, white, with a pale-yellow tinge.—*Eng. Fl. v. p. 9. Berk. Out. p. 95.*

Amongst short grass by roadsides.

Pileus $1\frac{1}{2}$ in. across, not at all campanulate, expanded, and broadly, obtusely umbonate, flesh thick in the centre, firm and tough, the cuticle broken into minute flat scales of a rich red brown. Gills numerous, unequal, rounded before and behind, broad, ventricose, quite free, the margin serrulate, white, with a slight yellowish tinge. Stem 1 in. high, $\frac{3}{8}$ in. thick in the middle,

divided into two distinct portions, the upper silky, of a pinkish hue, the lower scaly, like the pileus, but the scales browner, attenuated at the base, hollow, stuffed with fine silky filaments, with many branched fibrous roots. Ring fugacious, attached in minute portions to the edge of the pileus. Inodorous and insipid.—*M. J. B.* Spores $\cdot 0001 \times \cdot 00012$ in.—*W. G. S.*

Sect. 5. Illiniti.—pileus viscid.

33. Agaricus (Lepiota) gliodermus. *Fr.* "Viscid Lepiota."

Pileus thin, soft, campanulate, convex, smooth, even, rufous, viscid; stem whitish, floccoso-squamulose, stuffed with cottony threads; ring torn; gills free, white, approximate.—*Fr. Hym. Mon. p. 31. B. & Br. Ann. N.H. no. 785.*

In woods. Aug. Wothorp, near Stamford.

Pileus $1\frac{1}{2}$ in. across. Stem about 3 in. long, 2-3 lines thick, equal, dry, as far as the incomplete torn ring floccoso-squamulose, above the ring naked, whitish, or rufescent. Gills broad, crowded, white.

Sub-Gen. 3. ARMILLARIA. *Fr. S. M., i. p. 26.*



Fig. 36.

Veil partial, in infancy attaching the edge of pileus to the upper part of stem, and often forming flocci on the pileus (α); pileus generally fleshy; stem homogeneous and confluent with the hymenophore, furnished with a ring (sometimes absent in abnormal specimens), below the ring the veil is concrete with the stem, often forming scales upon it, similar to the scurfy scales on the pileus; gills broadly touching, or running down the stem.

HAB. On the ground, or on stumps of trees.—(*Pl. II., fig. 3, Ag. melleus.*)

This subgenus corresponds with *Pholiota* and *Stropharia*; it is also allied to *Tricholoma*, *Clitocybe*, and *Collybia*, amongst the white-spored Agarics. Fries subdivides *Armillaria* into groups, depending on their relations to one or other of these subgenera.—*W. G. S.*

Sect. 1. Tricholomoideæ.

34. Agaricus (Armillaria) constrictus. *Fr.* "White Armillaria."

Pileus fleshy, convex, then plane, obtuse, even, dry, with an evanescent silky lustre; stem solid, nearly equal; ring superior,

evanescent; gills emarginate, crowded, white.—*Fr. Epicr. p. 22. Batt. t. 7, f. 4. Eng. Fl. v. pt. 2, p. 11. Fr. Icon. t. 18, f. 1.*

In pastures, where the ground is bleached with urine. Rare. Northamptonshire.

Pure white, odour very strong, like that of fresh meal. Pileus obtuse, plano-convex, broadly umbonate, fleshy, shining with a silky lustre, assuming a very pale yellow tint when bruised; gills close, very deeply emarginate, even when quite young; stem 2 in. high, $\frac{1}{4}$ in. thick, rather flexuous, fibrillose, solid, more lax and fibrillose within, very brittle; when young, with a delicate web-like curtain, which soon vanishes; spores white, subelliptic.—*M. J. B.*

35. Agaricus (Armillaria) ramentaceus. *Bull.* "Dingy Armillaria."

Pileus fleshy, convexo-plane, obtuse, villososquamoso, dry; stem solid, unequal, scaly; ring inferior, of interwoven flocci; gills emarginate, crowded, whitish, then discoloured.—*Bull. t. 595. f. 3. —Berk. Out. p. 96.*

On the ground. Not common.

Whitish or yellowish, scales brown, odour unpleasant.

Sect. 2. Clitocyboideæ.

36. Agaricus (Armillaria) melleus. *Vahl.* "Honey-Coloured Armillaria."

Pileus fleshy, at length plane, clothed with fibrous scales; margin striate; stem spongy, stuffed, elastic, fibrillose; ring floccose, patent; gills adnate, ending in a decurrent tooth, somewhat distant, pallid, then mealy with the profuse white spores, and spotted with reddish-brown.—*Fr. Epicr. p. 23. Berk. Outl. t. 4, f. i. Cooke, B. F., t. 3. Fl. Dan. t. 1013. Vitt. Mang. t. 3. Vent. t. 24, t. 25, f. 1, 2. Lenz. f. 7. Price, f. 16, 32. Kromb. t. i. f. 13, t. 43, f. 2-6. Gard. Chron. (1860), p. 5. Badh. i. t. 16, f. 3, ii. t. 9, f. 3. Sow. t. 101. Batt. t. 11, F. B. Eng. Fl. v. p. 12. Gonn. & Rabh. t. 3. Barla. t. 11. A. laricinus. Bolt. t. 19?*

On dead stumps. Very common. [United States.]

Densely cæspitose, pale rufous, more or less shaded with yellow. Sometimes without a ring. Pileus 2-7 in. across, fleshy, at first convex, then plano-expanded, often sub-umbonate, variously lobed, dirty yellow, brownish yellow, or reddish, rough with reflexed scales, especially towards the centre, which are at first bright wax-yellow, at length dark brown; margin slightly striate, flesh firm; gills distant, adnato-decurrent, at first pale, at length reddish, mealy with the white spores; stem 2-8 in. high, swollen at the base, thinnest in the middle, fibrillose, with a slight yellow pubescence at the base, yellowish or reddish, occasionally somewhat scaly near the apex, firm and elastic, solid; ring large, yellow, tumid, spreading; odour agreeable; esculent, but not commendable.—*M. J. B.* Spores 00035×00023 in. —*W. G. S.* (Pl. ii., fig. 3 and fig. 36.)

Sect. 3. *Collybioideæ*.

37. **Agaricus** (*Armillaria*) **mucidus**. Fr. "Clammy Armillaria."

Pileus thin, soft, convex, then expanded, rugulose, glutinous; stem stuffed, rigid, thickened at the base; ring superior, reflexed, with the margin erect, striate; gills rounded, striato-decurrent, distant, white.—Fr. *Epicr.* p. 24. *Fl. Dan.* t. 773, 1130, 1372. *Gard. Chron.*, 1861, p. 576. *Tratt. Austr.* t. 27. *Eng. Fl.* v. p. 11. *Saund. & Sm.* t. 5. *Price*, f. 91.

On Beech.

[United States.]

Pure white, or with a cinereous tinge; cæspitose. Pileus $1\frac{1}{2}$ in. broad, white, tinged with brown, hemispherical, clammy, uneven, radiato-rugose, tough; margin thin, somewhat turned in; gills broad, distant, rounded behind, but not in front, adnate, margin serrulate; stem $1\frac{1}{2}$ –3 in. high, 1–2 lines thick, bulbous, attenuated upwards, often curved, white, brown at the base, with minute adpressed scales, juicy, solid, with a pale line down the centre; ring persistent; margin often brown, and slimy, adhering so closely to the stem by its upper portion as easily to escape notice in an advanced stage of growth.—*M. J. B.* Spores 00063×00053 in.—*W. G. S.*

[*AGARICUS MILLUS*, Sow. is doubtful. Berkeley refers it to *A. (Tricholoma) terreus*, and Smith, following Fries, in "Middlesex Flora," to *Armillaria*.]

Sub-Gen. 4. **TRICHOLOMA**. Fr. S. M. i., p. 36.

Veil absent, or if present, floccose, and adhering to the margin of pileus; pileus generally fleshy; stem homogeneous, and confluent with the hymenophore, central, and subfleshy, without either ring or volva, and with no distinct bark-like coat; gills sinuate, *i. e.*, with a sinus (or small sudden curve) near the stem (H).

HAB. All the species grow on the ground, the larger in hilly woods, and the smaller in pastures.—(*Pl. II.*, f. 4.)

Most of the species grow in the autumn, some very late, but a group of which *A. gambosus*, Fr. is the type, is strictly *vernal*, and the species constituting it have long been considered special delicacies; the greater number of the remaining species are also edible, and have a pleasant odour like that of new flour, but a few are rank and suspicious, of which *A. saponaceus* is an example.

A. *Limacina*—pileus viscid.

Sect. 1. Gills white, not changing.

38. **Agaricus** (*Tricholoma*) **equestris**. Linn. "Fir-wood Tricholoma."

Pileus fleshy, compact, convex, then expanded, obtuse, flexuose, squamulose, viscid; stem solid, obese, sulphur coloured, as well as

the free, crowded gills.—*Fr. Epicr. p. 26. Schæff. t. 41. Buxb. iv., t. 10. Price, f. 92. Berk. Out. t. 4, f. 2. Ann. N.H. no. 665. Krombh. t. 1, f. 16-17. t. 68, f. 18, 21. Harz. t. 22.*

Amongst fir leaves. Rare.

Pileus yellow, inclining to reddish, 3-5 in. broad, disc and scales darker. Variable in the length and thickness of the stem. Spores 00023×00015 in.—*W. G. S.*

39. Agaricus (Tricholoma) sejunctus. *Sow.* "Separating Tricholoma."

Pileus fleshy, convex, then expanded, umbonate, unequal, slightly viscid, streaked with black fibres; stem solid, stout, ventricose, sub-squamulose; gills emarginate, broad, rather distant, white.—*Sow. t. 126. Fr. Epicr. p. 26. Eng. Fl. v. p. 19. Berk. Out. p. 97. Fr. Icon. t. 23.*

In mixed woods.

[United States.]

Pileus several in. across; stem 2-3 in. high. Odour unpleasant, taste bitter, margin of the pileus thin, yellow. "Pileus dirty yellow or nearly white; gills whitish and thickest near the stem, somewhat flattened, as it were, by separating from it in a peculiar manner, and partly adhering to each other."—*Sow.* Spores nearly spherical 00025 in.—*W. G. S.*

40. Agaricus (Tricholoma) portentosus. *Fr.* "Dingy Tricholoma."

Pileus fleshy, convex, then expanded, sub-umbonate, unequal, viscid, streaked with black innate lines; margin thin; stem solid, stout, equal, striate; gills emarginate, very broad, white, at length distant and pallid.—*Fr. Epicr. p. 27. Ann. N.H. no. 666. Fr. Icon. t. 24a. Harz. t. 73.*

In woods. Sept. King's Cliffe.

Closely resembling *A. sejunctus*. Stem 3, sometimes 4-6 in. long, 1 in. thick, solid. Pileus 3-5 in. broad, livid or dingy, sometimes with a tinge of violet. Flesh scarcely compact, white. Spores 00018×00013 in.—*W. G. S.*

41. Agaricus (Tricholoma) fucatus. *Fr.* "Stained Tricholoma."

Pileus thin, conical, then convex, at length expanded, flexuose, viscid, streaked with innate lines; disc fleshy; stem solid, somewhat bulbous, squamulose; gills emarginate, rather crowded, yellowish-white.—*Fr. Epicr. p. 27. Eng. Fl. v. p. 116. Fr. Icon. t. 24b.*

In pine groves.

The thin pileus, squamulose, sub-bulbous stem, and yellowish gills distinguish it from *A. portentosus*. Pileus slightly viscid, flesh thick in the

centre, margin thin, yellowish, with cinereous fibrillæ, subrimulose, with a satiny lustre. Gills broad, emarginate, slightly wavy, moderately thick, not distant, scarcely connected by veins, with a slight tinge of yellow. Stem tinged with yellow, as is the outer flesh, punctato-squamulose, bulbous, attenuated upwards. Odour like that of new flour.—*M. J. B.*

42. Agaricus (Tricholoma) spermaticus. *Fr.* "Stinking Tricholoma."

White. Pileus rather fleshy, convex, then expanded, obtuse, repand, smooth, viscid; margin membranaceous, naked; stem stuffed, then hollow, elongated, twisted, even; gills emarginate, rather distant, eroded.—*Fr. Epicr. p. 27. Paul. t. 45, f. 1-3. Paul. t. 45.*

In fir woods.

Pileus several inches across. Smell strong, unpleasant.

Sect. 2. Gills discoloured.

43. Agaricus (Tricholoma) nictitans. *Fr.* "Spotted Gills Tricholoma."

Pileus fleshy, convex, then expanded, obtuse, smooth, viscid, even; stem stuffed, dry, elastic, nearly equal, squamulose, yellowish; gills from the first rounded behind, free, yellow, crowded, obscurely spotted with reddish brown.—*Fr. Epicr. p. 28. Bull. t. 574, f. 1. Huss. ii. t. 46. Ann. N.H. no. 667.*

In woods. Sept.

Inodorous. Stem 3 in. long, $\frac{1}{2}$ in. and more thick. Pileus 3-4 in. broad, viscid, yellowish, disc darker. Spores $\cdot 0003 \times \cdot 0002$ in.—*W. G. S.*

44. Agaricus (Tricholoma) fulvellus. *Fr.* "Tawny Tricholoma."

Pileus fleshy, convex, then expanded, viscid, even, disc darker, punctato-rugose, stem stuffed, then hollow, fibrillose, whitish, then rufous, naked above; gills rounded, then emarginate, crowded, white, then rufescent.—*Fr. Epicr. p. 28. Ag. fulvus Bull. t. 555, f. 2. Ann. N.H. no. 59.*

In woods. Inodorous.

Considered by Fries (Epicr.) as a variety of *A. nictitans*. Sometimes the gills and inside of the stem are more or less yellow. Smaller than the last. Spores nearly spherical $\cdot 00015$ in.—*W. G. S.*

45. Agaricus (Tricholoma) flavo-brunneus. *Fr.* "Yellow-brown Tricholoma."

Pileus fleshy, conical, then convex, at length expanded, subumbonate, viscid, clothed with streak-like scales; stem hollow,

somewhat ventricose, fibrillose, at first viscid, yellowish within, tip naked ; gills emarginate, decurrent, crowded, yellowish, then rufous.—*Fr. Epicr. p. 29. Letell. f. 707. Fr. Icon. t. 26a.*

In woods.

Odour that of new meal. Stem 3-5 in. long, $\frac{1}{2}$ in. thick, rufescent or brownish. Pileus 3-6 in. broad, disc darker, dingy rufous, or reddish brown.

46. Agaricus (Tricholoma) ustalis. *Fr.* "Burnt Tricholoma."

Pileus fleshy, convexo-plane, obtuse, smooth, viscid ; stem stuffed, equal, dry, rufo-fibrillose, apex naked, silky, nearly smooth ; gills emarginate, crowded, white, at length with reddish spots.—*Fr. Epicr. p. 29. Mon. Hym. i. p. 58. Batt. t. 17. c.*

Chiefly in pine woods. Reigate (*W. G. S.*)

Pileus fleshy, not compact ; hemispherical at first, umbonate, soon plane and obtuse, glabrous, edge not striate, dotted on the disc ; gills emarginate, with a decurrent tooth, crowded, moderately broad, white, at length turning red ; stem stuffed, at length hollow, two to three in. long, about half in. thick, equal, dry, fibrous, whitish or turning red, whiter and silky at the apex, but not mealy ; scentless. Spores 0003×0002 in.—*W. G. S.*

47. Agaricus (Tricholoma) albo-brunneus. *P.* "White and Brown Tricholoma."

Pileus fleshy, hemispherical, then expanded, obtuse, viscid, streaked ; disc papillose ; stem solid, short, equal, white above and squamulose ; gills emarginate, crowded, white, then brownish.—*Fr. Epicr. p. 29. Sow. t. 416. Schæff. t. 38. Eng. Fl. v. p. 15. Barla. t. 12.*

In woods. Smell like new meal.

Cæspitose. Pileus 3 in. broad, convex, flattish, very glutinous, dirty white, changing to a ferruginous tint. Gills white or brown, very broad, and slightly angular near the stem. Stem 3 in. high, $\frac{1}{2}$ in. thick, generally swollen near the middle, attenuated above and below, towards the base highly ferruginous. When young covered with a shaggy wool, which soon disappears. Remarkably glutinous, so that leaves and sticks which are in contact can scarce be separated without tearing the pileus. The pileus appears when grown to be constantly smooth, but the stem, though occasionally smooth, generally has the apex pale and squamulose, and the lower part more or less marked with transverse scales.—*M. J. B.* Spores 00014×00016 in.—*W. G. S.*

48. Agaricus (Tricholoma) pessundatus. *Fr.* "Overturned Tricholoma."

Pileus fleshy, compact, convex, very obtuse, repand, viscid, granulose, spotted ; stem solid, firm, at first ovato-bulbose, every-

where villous with whitish scales; gills free, or emarginate, crowded, white, at length spotted with rufous.—*Fr. Epicr. p. 29. Mon. Hym. i. p. 58. Sterb. t. 8, A.*

In pine woods. (*J. A. C.*)

Pileus compactly fleshy, convex, then expanded, very obtuse, bent, glabrous, never striate, but scaly, spotted, viscid, chestnut or red, paler at the circumference; gills deeply emarginate, crowded at first, very narrow, shining, then wider and reddish; stem solid, hard, at first bulbous, entirely villosa-scaly, at length nearly equal, 2 to 3 ins. long, 1 in. thick, nearly glabrous, white, odour strong, like new meal, taste pleasant, spores 0002×0001 in.; allied to *A. russula*, which is distinguished by its granular rosy pileus.—*W. G. S.*

[Fries places *Agaricus frumentaceus*, Bull. here, whilst Berkeley removes it to *Entoloma*, on the ground that the spores are rose-coloured.]

B. *Flocculosa*.—pileus dry, fibrillose.

Sect. 1. Gills whitish, not spotted.

49. *Agaricus (Tricholoma) rutilans.* *Schæff.* “Red-haired *Tricholoma*.”

Pileus fleshy, campanulate, then expanded, dry, variegated, as well as the somewhat hollow, soft, ventricose stem, with purplish down; gills rounded, crowded, yellow; edge thickened, villous.—*Fr. Epicr. p. 30. Schæff. t. 219. Eng. Fl. v. p. 17. Sow. t. 31. Fl. Dan. t. 1610. Bolt. t. 14. Buxb. v. t. 46. Krombh. t. 63, f. 10-12.*

On pine stumps. Common.

Subcaespitose. Pileus 2-4 in. broad, at first hemispherical, or somewhat cylindrical, at length expanded, obtuse, more rarely plane, clothed with a short, dense, crimson-red or olive-purple down, margin involute, white; as the pileus expands the yellow cuticle becomes visible in the interstices of the down, which is then scattered. Gills free, broad, rounded behind, but often when old adnexed, sometimes forked, bright yellow, floccoso-serrate, margin turning sometimes to a rich yellow-brown. Stem $2\frac{1}{2}$ - $3\frac{1}{2}$ in. high, $\frac{1}{2}$ -1 in. thick, downy, like the pileus, only the down is shorter, very obtuse at the base, attenuated upwards, solid, then occasionally hollow. Odour strong. Taste bitter.—*M. J. B.* Spores 00033×0002 in.—*W. G. S.*

50. *Agaricus (Tricholoma) scalpturatus.* *Fr.* “Scratched *Tricholoma*.”

Pileus fleshy, conical, then convex, and expanded, obtuse, breaking up into floccose, umber, or rufous scales; stem stuffed, unequal, white, fibrillose; gills emarginate, somewhat crowded, quite entire, white, then yellowish.—*Fr. Epicr. p. 31. Batt., t. 15 f. (young). A. argyraceus. Eng. Fl., No. 36, in part.*

Fir plantations, borders of woods, &c.

Stem solid, 2-3 in. long, $\frac{1}{2}$ in. thick, firm, closely fibrillose. Pileus 2-3 in. broad, the cuticle breaking up in scattered, floccose, umber, or rufous scales. Flesh whitish.

51. Agaricus (Tricholoma) luridus. *Schæff.* "Lurid Tricholoma."

Pileus fleshy, convex, then expanded, sub-repand, dry, smooth, at length breaking up into little fibres; stem stuffed, stout, unequal, smooth; gills emarginate, crowded, dirty white.—*Schæff.*, *t.* 69. *Fr. Epicr.* *p.* 31. *Batt.*, *t.* 17. *B. Eng. Fl.* *v.* *p.* 16.

In woods. Common. [United States.]

Subgregarious. Pileus 3 in. broad, at first convex, then expanded, often lobed and waved, brown or greyish, with tints of yellow, sub-umbonate, fibrilloso-striate, fleshy; flesh firm. Gills broad, thick, rounded behind, nearly free, but annexed by a small tooth, connected by veins, much broken or notched. Stem 2-4 in. long, 3-5 lines thick, obese, nearly equal, or slightly attenuated, solid, minutely and closely fibrillose, pulverulentosquamulose above, where it is yellowish, undulated, sometimes of a beautiful red when bruised. Odour like new flour.—*Eng. Fl.*

52. Agaricus (Tricholoma) columbetta. *Fr.* "Dove-colour Tricholoma."

White; pileus fleshy, ovate, then expanded, obtuse, rigid, sub-flexuose, at first smooth, then silky, fibrillose, or squamulose; margin involute, at first tomentose; stem solid, stout, unequal, striate, nearly smooth; gills emarginate, crowded, thin, somewhat serrulated.—*Fr. Epicr.* *p.* 33. *Kromb.* *t.* 25, *f.* 6-7. *Letell.* *t.* 625. *Fr. Icon.* *t.* 29 *b.* *Sterb.* *t.* 9. *B. &c.* *Eng. Fl.* *v.* *p.* 19. *Ann. N. H.*, *no.* 259.

In woods. Oct. [United States.]

Pileus $1\frac{1}{2}$ -4 in. broad, convex, silky, centre dilute mouse colour, lightly shaded off, border white when young, sometimes tinged with pink, cracking with age. Gills fixed, white, brittle. Stem 2 in. high, 3-6 lines thick, solid, white, cylindrical, often compressed, crooked, silky, central when young, not always so in a more advanced age.—*With.* Sometimes the pileus is white, spotted with reddish, or with a yellowish tinge. Spores '00023 + '00018 in.—*W.G.S.*

Sect. 2. Gills discoloured, or spotted.

53. Agaricus (Tricholoma) imbricatus. *Fr.* "Imbricated Tricholoma."

Pileus fleshy, compact, convex, then expanded, obtuse, dry, innato-squamulose; margin at first inflexed, pubescent; stem solid, stout, pruinose above; gills emarginate, adnexed, somewhat crowded, white, then becoming rufescent.—*Epicr.* *p.* 33. *Schæff.* *t.* 25. *Berk. Outl.* *t.* 4, *f.* 3. *Eng. Fl.* *v.* *p.* 17. *Fr. Icon.* *t.* 30.

In fir woods.

Gregarious. Pileus 2-3½ in. broad, dry, obtuse, at first subconic, then convex, expanded, sometimes plane, very broadly umbonate, fleshy, rich red brown, fibrilloso-squamulose, rimulose, the umbo darker, with the fibrils closer; occasionally the pileus is scarcely squamulose, but clothed with adpressed silky fibrils. Margin involute, paler, tomentose. Gills slightly rounded behind, subadnate with a minute tooth, or nearly free, umber when bruised, not very broad. Stem 2½-4 in. high, ½-¾ in. thick, firm, stuffed, at length more or less hollow, sometimes strongly attenuated, sometimes incrassated at the base, fibrillose, colour of the pileus, nearly white above, where it is, squamulose or pubescent.—*M. J. B.* Spores '00023 × '00018 in.—*W. G. S.*

54. Agaricus (Tricholoma) vaccinus. P. "Scaly Tricholoma."

Pileus fleshy, campanulate, then expanded, umbonate, dry, rough with floccose scales; margin involute, tomentose; stem hollow, equal, fibrillose; gills fixed, somewhat distant, white, at length rufescent.—*Pers. Syn. p.* 293. *Fr. Epicr. p.* 33. *Batsch. f.* 116. *Pers. Ic. & Desc. t.* 2, *f.* 1-4. *Eng. Fl. v. p.* 17.

In fir woods. Sept. Oct.

[Carolina, U.S.]

Pileus 1-2 in. broad, campanulate when young, clothed with scales, those in the centre thick, broad, short, on the margin consisting of fasciculate hairs. Gills rather broad, emarginate, nearly free, at first dirty white, in age of a rufous hue, margin generally stained with rusty spots. Stem 3-4 in. high, ½ in. thick, beset with hairy scales, which mostly point upwards, paler than the pileus, whitish above, base clothed with white down. Veil fugacious. Taste bitter.—*Pers.*

55. Agaricus (Tricholoma) crassifolius. Berk. "Thick gilled Tricholoma."

Pileus fleshy, waved, minutely adpresso-squamulose, umbonate, ochraceous; disc umber; stem solid, nearly equal, pruinose; gills thick, moderately distant, nearly free, at length yellowish, stained with brown.—*Outl. p.* 100. *A. pachyphyllus. Eng. Fl., p.* 16.

In fir woods.

Gregarious. Pileus 2-4 in. across, rather wavy, umbonate, at length often depressed, ochraceous, shaded towards the centre with umber, minutely squamulose, sometimes (when old) the epidermis cracks in broad scales, flesh very firm. Gills slightly adnexed or nearly free, acute behind, moderately distant, thick, fleshy, acquiring at length an ochraceous hue, here and there stained with umber. Stem 1½-2 in. long, ¾ of an in. thick, solid, nearly equal, pruinose, much paler than the pileus. Odour rather strong.—*Eng. Fl.*

56. Agaricus (Tricholoma) murinaceus. Bull. "Mouse Colour Tricholoma."

Pileus thin, firm, brittle, at first campanulate, then expanded, cracked, streaked, silky, dry; stem stout, cracked, and streaked with minute black scales, solid; gills very broad, undulated,

distant, more or less anastomosing, brittle, cinereous, often marked with raised lines ; edge at length black.—*Sow. t.* 106. *Bull. t.* 520. *Ann. N.H.*, no. 261.

In woods. Sept. Not common.

Very different from *Hygrophorus murinaceus*, Fr. Pileus $4\frac{1}{2}$ in. across, at first campanulate, slightly umbonate, then expanded, thin, firm, but very brittle, mouse-coloured, cracked and virgate, silky, not the least viscid, flesh white ; taste rather acrid ; smell not nitrous. Stem 3 in. high, 1 in. thick at the top, cracked and streaked, silky, with minute black scales, solid but fibrous, not the least stuffed or hollow ; gills very broad, undulate, distant, having a tendency to become forked and anastomosing, brittle, often marked with raised lines, cinereous, powdery, interstices slightly veined, edge at length black.—*M. J. B.* Spores 00019×00014 in.—*W. G. S.*

57. Agaricus (Tricholoma) terreus. Schæff. “Grey Tricholoma.”

Pileus fleshy, soft, campanulate, then expanded, umbonate, dry, clothed with innate, floccose, or scaly down ; stem stuffed, nearly equal, adpresso-fibrillose, whitish ; gills adnexed, with a decurrent tooth, crenulate, pale-grey.—*Schæff. t.* 64. *Fr. Epicr. p.* 34. *Letell. t.* 663. *Sow. t.* 76. *Paul. t.* 116. *Vent. t.* 45, *f.* 4, 5. *A. multiformis. Eng. Fl. v.* p. 18.

In woods, especially of fir.

Gregarious, often in large rings, or solitary. Pileus 1-2 $\frac{1}{2}$ in. broad, conic when young, with a delicate arachnoid veil, then obtuse, expanded, quite plane, variously waved, sometimes minutely umbonate, thin, mouse-grey, or very dark cinereous, clothed with flat and matted down, with sometimes a few depressed or raised squamules of the same colour, margin inflexed ; flesh cinereous ; gills rather distant, broad, the margin wavy, more or less rounded behind, and attached by a tooth, more or less cinereous, especially when young, with a few indistinct connecting veins ; stem 1-3 in. high, $\frac{1}{4}$ - $\frac{1}{2}$ in. thick, stuffed, at length hollow, fibrillose sericeous, sometimes a little pulverulent, white, the base occasionally sub-rufescent ; pileus and stem very brittle.—*M. J. B.* Spores nearly spherical 0002 in.—*W. G. S.*

(*Pl. II.*, *fig.* 4, *reduced.*)

C. Rigida—granulate or squamulose.

Sect. 1. Gills whitish.

58. Agaricus (Tricholoma) saponaceus. Fr. “Strong Scented Tricholoma.”

Strong scented, firm. Pileus rather compact, convex, then expanded, obtuse, dry, smooth ; then rimoso-squamose or punctate ; margin at first naked ; stem solid, unequal ; gills uncinato-marginate, distant, thin, quite entire, white then pallid, sometimes greenish.—*Fr. Epicr. p.* 35. *Bull. t.* 602. *Sow. t.* 281. *Batsch. t.*

36, f. 203 a. b. *B. and Br. Ann. N.H.*, 1866, no. 1106. *A. argy-raceus. Eng. Fl. (in part.)*

In woods. Sept.

Stem 2-3 in. long, $\frac{1}{2}$ in. or more thick, unequal or curved, base attenuated, rooting. Pileus 2-4 in. broad, whitish, cinereous, greenish or blackish, margin thin, at first inflexed. Spores 0002×00015 in.—*W. G. S.*

59. *Agaricus (Tricholoma) cartilagineus.* Bull. “Cartilaginous *Tricholoma*.”

Cartilaginous, elastic, rather fragile; pileus fleshy, convex, bullate, gibbous, undulated, smooth; cuticle rimulose, finely dotted with black; stem stuffed, equal, stout, lineato-striate, somewhat mealy; gills slightly emarginate, adnexed, crowded, pallid.—*Bull. t.* 589, f. 2. *Fr. Epicr. p.* 37. *Sm. Journ. Bot.* iii. p. 28.

In grassy spots.

Smell like that of new flour. Pileus 2-3 in. or more broad, stem short and firm, but fragile, 1-2 in. long.

60. *Agaricus (Tricholoma) cuneifolius.* Fr. “Wedge-gill *Tricholoma*.”

Very brittle; pileus rather fleshy, convex, then plane, dry, smooth, but soon cracked; stem, hollow, attenuated downwards, white, pruinose above; gills thin, crowded, white, broad in front, obliquely truncate, attenuated behind, with a decurrent tooth.—*Fr. Epicr. p.* 37. *Eng. Fl.* v. p. 44. *Bull. t.* 580, f. A.B. *Batsch. f.* 206.

In pastures. Not uncommon.

Pileus about 1 in. broad, brownish or subochraceous, subcarnose, at first conic, obtuse, afterwards expanded, with a strong umbo, much waved and split at the margin, which is at first involute, and minutely tomentose, the surface rimose; gills distant, broad in front, ventricose, acutely arcuato-adnate, thick, connected and traversed by veins, white, with a slight reddish cinereous tinge; stem 1-1 $\frac{1}{2}$ in. high, 2-4 lines thick, nearly equal, stuffed, at length hollow, pruinose above, with sometimes a few superficial squamules towards the base, smell like new meal.—*M. J. B.* Spores nearly spherical 00018 in.—*W. G. S.*

Sect. 2. Gills rufescent or cinereous.

61. *Agaricus (Tricholoma) colossus.* Fr. “Colossal *Tricholoma*.”

Large, very hard, pileus compact, very thick, hemispherical, then expanded, smooth, at length diffracto-squamulose, margin at first involute, at length unrolled and flexuous, stem quite solid, at first tuberous, apex constricted, smooth, white, below and within

brick-red ; gills rounded, crowded, thin, white, then broad, and of a pallid brick-red.—*Fr. Epicr. p. 38. Mon. Hym. i. p. 47. Icones. t. 21.*

Woods. Near Taunton.—(*J. A. C.*)

Pileus when young tuberiform, emerging from the earth in a bulbous form, narrowly involute at the margin, surrounding the narrow part of the stem ; then hemispherical, at length unrolled, plano-convex and depressed, always very obtuse, when expanded a span or more wide, scaly. Gills rounded, free, but on account of the obliquity of the stem, emarginate, decurrent, at first narrow and crowded, white, then broader, more distant, entire, at length $\frac{1}{2}$ in. broad, fragile, lacerated, pale brick red ; stem solid, flesh everywhere similar and very compact, 3 to 4 in. long, ovato-bulbous at the base, but very much narrowed at the apex, 2 in. thick, the bulbous part glabrous, but fibroso-lacerated, tawny, the narrow part floccose and shining ; veil obsolete, unless the flocci on the apex of the stem are considered a rudimentary one ; flesh dry, very hard, extremely fibrous when broken, passing into a brick-red color, at first scentless, then with a smell of cheese, or fresh meal. Spores $\cdot 0002 \times \cdot 00015$ in.—*W. G. S.*

D. *Sericella*—pileus at first silky.

Sect. 1. Strong scented.

62. *Agaricus (Tricholoma) sulfureus.* Bull. “Sulphury *Tricholoma.*”

Pileus fleshy, convex, then expanded, rather umbonate, unequal, at first slightly silky, then smooth and even ; stem stuffed, sub-equal, slightly striate ; gills distant, arcuato-adfixed, sulphur-coloured as well as the stem.—*Bull. t. 168. Fr. Epicr. p. 40. Vent. t. 23, f. 4-5. Berk. Outl. t. 4, f. 4. Sow. t. 44. Smith, P.M., f. 23. Fl. Dan. t. 1910, f. 1. Paul. t. 85, f. 3-4. Eng. Fl. v. p. 42.*

In woods. Common.

Pileus 1-2 in. broad, fleshy, obtuse, at length expanded or depressed, with a slight appearance of an umbo, sometimes flexuous and irregular, dirty yellow, or ochraceous umber, darker in the centre, the margin at first involute, and minutely tomentose, the whole clothed with extremely minute silkiness or squamules, so as to give it a pulverulent appearance, retaining the impression of the fingers ; flesh yellow ; gills sub-distant, rounded, flexuous, emarginate, or arcuato-adnate ; stem 2 in. or more high, 4 lines thick, occasionally sub-bulbous, stuffed, sometimes at length hollow, the surface of the cavity rather slimy, yellow within, furnished at the base occasionally with many rather strong, yellow, fibrous roots ; odour disagreeable, taste unpleasant.—*M. J. B.*

63. *Agaricus (Tricholoma) bufonius.* P. “Toad-like *Tricholoma.*”

Pileus fleshy, convex, then expanded, sub-umbonate, at first silky, then smooth, punctato-rugose, opaque ; stem stuffed, equal, flocculose ; gills arcuate, somewhat decurrent, rather distant, of

a yellow tan-colour.—*Fr. Epicr. p. 40. Bull. t. 545, f. 2-0. Ann. N.H. no. 786.*

In pine woods. Nov. Coed Coch.

Pileus purplish, brownish, tan-coloured, &c; stem 2-4 in. long, flocculose; gills rather more crowded, and paler than in *Ag. sulfureus*.

64. *Agaricus (Tricholoma) lascivus.* *Fr.* "Tarry Tricholoma."

Pileus fleshy, convex, then expanded, obtuse, somewhat depressed, at first silky, then smooth and even; stem solid, equal, rigid, rooting, white, tomentose at the base; gills arcuate, adnexed, crowded, white.—*Fr. Epicr. p. 40. Eng. Fl. v. p. 42.*

In woods.

Pileus pale tan-coloured, 2½ in. broad, convex, at length depressed, firm, fleshy, under the lens minutely adpresso-silky, margin at first involute, flesh white; gills white, when young arcuato-adnate, nearly horizontal, when old sub-decurrent, very brittle, not very close; stem firm, solid, more or less fibrillose, or fibrilloso-squamose, fibrillæ curved up from below, paler than the pileus, rooting, downy at the base, not bulbous, apex pruinose; odour of gas tar.—*M. J. B.*

65. *Agaricus (Tricholoma) inamænus.* *Fr.* "Unpleasant Tricholoma."

Pileus fleshy, convex, then expanded, rather umbonate, slightly silky at first, then smooth and even; stem solid, equal, rooting, white; gills arcuato-adfixed, decurrent, very distant, white.—*Fr. Epicr. p. 40. Eng. Fl. v. p. 43.*

In woods. Oct.

Pileus 1-3 in. broad, convex, with or without an umbo, fleshy, but not very thick on the margin, under the lens adpresso-silky, white, with a slight tinge of ochre in the centre, often minutely cracked; gills broad, distant, emarginate; stem 2 in. or more long, 3-6 lines thick, equal, tough, not always rooting; odour strong.—*M. J. B.*

Sect. 2. Inodorous; small.

66. *Agaricus (Tricholoma) ionides.* *Bull.* "Purplish Tricholoma."

Pileus fleshy, campanulate, convex, then expanded, umbonate, even, nearly smooth, changing colour; margin at first flocculose; stem stuffed, elastic, attenuated, fibrillose; gills emarginate, with a decurrent tooth, crowded, thin, eroded, white, then pallid.—*Bull. t. 533, f. 3. Fr. Epicr. p. 41. B. & Br. Ann. N.H. no. 902. A. purpureus. Bolt. t. 41.*

In woods.

Pileus 1-3 in. broad; stem 2 in. long, 2-3 lines thick.

- 67. Agaricus (Tricholoma) pæonius.** *Fr.* "Pæony Tricholoma."

Pileus fleshy, convexo-plane, sub-repand, very obtuse, even, silky, then nearly smooth, margin flocculose; stem hollow, soft, equal, fragile, persistently fleshy-red; gills rounded, free, ventricose, crowded, whitish.—*Fr. Epicr. p. 42. Mon. Hym. i. p. 81.*

Amongst grass and moss. Oct. Burnham Beeches.—*C.E.B.*

Pileus very obtuse, $\frac{1}{2}$ in. broad, of a persistent red colour; stem about 1 in. long, 2-3 lines thick.

- 68. Agaricus (Tricholoma) carneus.** *Bull.* "Flesh-coloured Tricholoma."

Pileus rather fleshy, hemispherical, or convex, then plane, or depressed, obtuse, even, nearly smooth, becoming pallid; stem stuffed, short, rigid, thickened upwards, pruinose, reddish; gills very broad behind, rounded, crowded, white.—*Bull. t. 533, f. 1. Fr. Epicr. p. 42. Eng. Fl. v. p. 30.* Krombh. t. i. f. 30.*

In pastures.

Pileus seldom exceeding one inch, plane, sub-carnose, often slightly umbonate, firm, shining rufous pink, rather undulated, flesh white; gills white, crowded, rounded behind, with a short decurrent tooth; stem 1 in. high, $1\frac{1}{2}$ lines thick, same colour as the pileus, stuffed below, at length hollow, frequently splitting, minutely squamulose.—*M. J. B. Spores '0001 \times '00007 in. —W. G. S.*

E. Guttata—pileus rivulose, &c.

- 69. Agaricus (Tricholoma) gambosus.** *Fr.* "St. George's Mushroom."

Pileus thick, fleshy, convex, then expanded, undulate, obtuse, moist, smooth, spotted, at length cracked; margin involute at first; stem solid, stout, equal, flocculose at the apex; gills emarginate, with an adnexed tooth, ventricose, crowded, yellowish-white.—*Epicr. p. 43. Ann. N.H., no. 140. Berk. Outl. t. 4, f. 5. Sow. t. 281. Vent. t. 11. Huss. i. t. 83. Smith E. M. f. 19. Cooke B. F. t. 9. Krombh. t. 63, f. 18-22. Gard. Chron. (1860) p. 672, fig. Trans. Woolh. Cl. (1868) t. 12. Badh. i. t. 1, ii. t. i. f. 1.*

In pastures. May. June. Esculent.

Pileus white or slightly tinged with ochre, growing in rings; variable in size; smell strong. This is the *Agaricus prunulus* of some authors. Spores $\cdot 00052 \times \cdot 0004$ in.—*W. G. S.*

- 70. Agaricus (Tricholoma) albellus.** *D. C.* "Confluent Tricholoma."

Pileus at first conical, then expanded, smooth, moist, spotted as if with scales; disc compact, sub-umbonate; margin thin, even, naked; stem solid, ovato-bulbous, fibrilloso-striate; gills attenuated behind, and adnexed without a tooth, crowded, entire, white, broadest in front.—*Fr. Epicr. p.* 44. *Paul. t.* 95, *f.* 1-8. *Schæff. t.* 50. *Tratt. Aust. t.* 20. *Sow. t.* 122. *Smith. Seem. Journ.* (1866) *t.* 46, *f.* 45.

On the ground. Rare. Esculent.

The stem of the fresh plant has a slight inclination to be silky outside, becoming ultimately stuffed or inclined to hollow within, whilst the word "mottled" would give a better idea of the pileus than "spotted after the fashion of scales;" this part of the plant is very conical and fleshy. Spores very small, ovoid, .0001 in. long.—*W. G. S.*

- 71. Agaricus (Tricholoma) monstrosus.** *Sow.* "Monstrous Tricholoma."

Pileus fleshy, at first convex and umbonate, at length waved and lobed, opaque as if white-washed; margin inflexed; stem compressed, solid, streaked, opaque white, tomentoso-squamulose above, slightly rooting; gills moderately distant, scarcely rounded behind, but not truly decurrent, cream coloured.—*Sow. t.* 283. *Fr. Epicr. p.* 104.

On the ground. Probably esculent.

Often densely caespitose, and then not compressed.

- 72. Agaricus (Tricholoma) immundus.** *Berk.* "Dirty Tricholoma."

Cæspitose, fleshy, pileus at first convex, dirty white, stained with bistre, minutely silky; margin inflexed, silky or minutely scabrous, and squamulose; stem fibrillose, of the same colour as the pileus; gills sub-cinereous, with a pinkish tinge, marked with transverse lines, emarginate.—*Berk. Outl. p.* 103, *no.* 57.

Amongst short grass, on sheep's dung.

Pileus 2 in. or more across; every part blackish when bruised; border deflexed; spores white.—*M. J. B.*

- 73. Agaricus (Tricholoma) tigrinus.** *Fr.* "Spotted Tricholoma."

Pileus fleshy, conical, convex, then expanded, contorted, or cracked, moist, smooth, spotted with black; margin even; stem

solid, stout, somewhat pruinose, striate, swollen at the base; gills adnate, with a decurrent tooth, at length distant, white, then dingy.—*Fr. Epicr. p. 45. Schæff. t. 89.*

Under firs.

Reigate.—*W. G. S.*

Odour foetid; spores nearly round, '0003 in.; pileus 2-3 in. broad; stem $1\frac{1}{2}$ in. long, $\frac{1}{2}$ line thick. Fries does not consider this distinct from *A. graveolens*.

F. *Spongiosa*—pileus moist, compact, or spongy.

74. *Agaricus (Tricholoma) albus.* *Fr.* "White Tricholoma."

Pileus fleshy, convex, then depressed, obtuse, smooth, even, dry; margin at first involute, at length repand; stem solid, firm, elastic, equal, smooth; gills rounded behind, fixed, crowded, thin, broad, white.—*Fr. Epicr. p. 47. Berk. Outl. t. 4, f. 6. Bull. t. 536. Batt. t. 20, f. 1.*

In woods.

White or shaded with yellow; variable in size; stem solid, 3 in. long, $\frac{1}{2}$ in. and more thick; pileus 3-4 in. broad, tough, very dry, and smooth. Spores '0001 \times '0002 in.—*W. G. S.*

75. *Agaricus (Tricholoma) acerbus.* *Bull.* "Bitter Tricholoma."

Pileus fleshy, convex, then expanded, obtuse, smooth, rather spotted; margin thin, strongly involute, sulcate; stem solid, blunt, yellowish, squamulose above; gills emarginate, crowded, pallid, then inclined to rufous.—*Bull. t. 571, f. 2. Fr. Epicr. p. 49. Ann. N.H. no. 668. Vent. t. 38, f. 7-8.*

In woods. Not common.

Pileus 3-4 in. across; white, tinged with yellow, at length stained. Remarkable for its bitter taste, and involute sulcate margin. Spores '00017 in. diameter.—*W. G. S.*

G. *Hygrophana*—pileus thin, at length soft, moist, hygrophanous.

76. *Agaricus (Tricholoma) grammopodius.* *Bull.* "Ring Tricholoma."

Pileus fleshy, campanulate, or convex, then expanded or depressed, umbonate, smooth, moist; stem stuffed, elastic, sulcate, smooth, attenuated upwards; gills arcuate, adnate, crowded, white.—*Bull. t. 548-585, f. 1. Fr. Epicr. p. 50. Huss. ii. t. 41. Bolt. t. 40? Eng. Fl. v. p. 37. Ann. N.H. no. 61.*

In pastures forming rings.

Large, brownish grey; pileus 3-5 in. broad, fleshy, margin thin, rather brittle, convex, firm, campanulate, then somewhat plane, also depressed and repand; gills not decurrent, narrow, sometimes divided; stem 3 in. high, $\frac{1}{2}$ in. thick, firm, of the colour of the pileus, thickened at the base, and villous.—*Fries*.

77. Agaricus (Tricholoma) melaleucus. *P.* "Changeable Tricholoma."

Pileus fleshy, thin, convex, then expanded, obsoletely umbonate, smooth, moist, changing colour; stem stuffed, thin, elastic, somewhat smooth, whitish, sprinkled with a few fibrils, thickened at the base; gills emarginate, adnexed, ventricose, crowded, white.—*Fr. Epicr. p. 51. Buxb. iv. t. 12, f. 2.*

On the ground.

Stem stuffed, then hollow, 2-3 in. long, 2-3 lin. thick, whitish, with darker striæ; pileus $1\frac{1}{2}$ -3 in. broad, dingy black, then livid brown, pale when dry; flesh soft, white.

78. Agaricus (Tricholoma) brevipes. *Bull.* "Short-stemmed Tricholoma."

Pileus fleshy, soft, convex, then plane, even, smooth, opaque when dry, umber, growing pallid; stem solid, firm, rigid, very short, sub-incrassated, brown; gills emarginate, crowded, ventricose, brownish, then dirty white.—*Bull. t. 521, f. 2. Paul. t. 44, f. 1-2. Fr. Ep. p. 51. Seem. Journ. (1869) t. 95, f. 1-4. Kl. Fl. Boruss. t. 374.*

In plantations. June. Esculent.

Pileus about 2 in. broad. Stem brown within and without, bulbous, very short. Spores 00032×0002 in.—*W. G. S.*

79. Agaricus (Tricholoma) humilis. *Fr.* "Dwarf Tricholoma."

Pileus fleshy, soft, umbonate, then convexo-plane or depressed, even, smooth, hygrophanous; margin thin, extending beyond the gills; stem stuffed, short, equal, fragile, pallid, villosopulverulent; gills rounded (with a decurrent tooth), crowded, ventricose, whitish.—*Fr. Epicr. p. 52. Buxb. iv. t. 32. A. blandus, Eng. Fl. No. 41, v. p. 20. Ann. N.H. no. 260.*

On the ground and amongst grass. [United States.]

Pileus $2\frac{1}{2}$ in. broad, plano-convex, umbonate, very minutely pulverulentotomentose, so that when touched the impression of the fingers remains upon it, not brittle, moderately fleshy, dry, the margin sometimes undulate, grey-lilac, with a tinge of brown on the umbo. When young sometimes browner, the edge white, and minutely downy; gills broad, rounded behind and nearly free, white, margin undulate, brittle, becoming rather brown at the edge as they dry. Stem 2 in. high, 2 lines thick, $\frac{3}{4}$ in. at the base, sub-bulbous, and

brownish at the base, the brown colour penetrating the flesh to the centre, solid, rather brittle, pulverulento-squamulose at the apex, subfibrilloso-rimose below, with a little down at the base. Spores white, round.—*M. J. B.*

80. Agaricus (Tricholoma) subpulverulentus. *Pers.* "Lustrous Tricholoma."

Pileus fleshy, convex, then expanded or depressed, even, with an innate, white, pruinose lustre; margin inflexed; stem solid, equal, smooth, somewhat striate; gills rounded (without a tooth), crowded, narrow, white.—*Fr. Epicr. p. 52. Huss. ii. t. 39. Ann. N.H. no. 669.*

In pastures. Oct.

Pileus 2 in. across. Dirty white, or greyish, with a white lustre. Spores $\cdot 0001 \times \cdot 00018$ in.—*W. G. S.*

Sub-Gen. 5. CLITOCYBE. *Fr. S. M. i. p. 78.*

Pileus generally fleshy in the disc, obtuse, plane or depressed, hygrophanous, or not hygrophanous; stem confluent and homogeneous with the hymenophore, elastic, with a fibrous outer coat, covered with minute fibres; gills acutely adnate, or decurrent.—*Pl. II., fig. 5.*

HAB. All are terrestrial.

The species are generally small, though some are very large; many possess an agreeable odour, but few only are known to be edible. Most of the species appear late in the autumn or in early winter.—*W. G. S.*

A. Disciformes—pileus flattened.

Sect. 1. Pileus cinereous or tawny.

81. Agaricus (Clitocybe) nebularis. *Batsch.* "Clouded Clitocybe."

Pileus fleshy, compact, convex, then expanded, obtuse, even, at first clouded with grey, then naked; stem stuffed, firm, fibrilloso-striate; gills somewhat decurrent, arcuate, crowded, white, then pallid.—*Batsch. f. 193. Eng. Fl. v. p. 34. Fr. Epicr. p. 55. Smith E.M. f. 24. Fl. Dan. t. 1734. Gard. Chron. (1860) p. 145, fig. Bull. t. 400. Ag. turgidus, Grev. t. 9. Huss. ii. t. 9. Badh. i. t. 9, f. 1, ii. t. 4, f. 2. Berk. exs. no. 2.*

In woods. Common. Esculent. [United States.]

Stem 3 in. long, about an in. thick, fibrilloso-striate, white. Pileus fleshy, 3.5 in. broad, clouded with grey, or dingy brown, at length grey, sometimes pruinose. Spores $\cdot 00017 \times \cdot 0001$ in.—*W. G. S.*

82. Agaricus (Clitocybe) inornatus. *Sow.* "Grey Clitocybe."

Pileus fleshy, plane or depressed, obtuse, even, smooth; cuticle separable; stem solid, nearly equal, smooth, firm, grey, as well as the adnate, plane, at length decurrent, crowded gills.—*Sow. t.* 342. *Fr. Epicr.* p. 57. *Eng. Fl.* v. p. 37.

Amongst grass.

Pileus 3 in. broad, fleshy, plane, or subdepressed, margin turned in. Gills of the same colour as the pileus. Stem 2 in. long, $\frac{1}{2}$ in. thick, paler than the pileus.—*M. J. B.*

Sect. 2. Pileus brightly coloured.

83. Agaricus (Clitocybe) vernicosus. *Fr.* "Varnished Clitocybe."

Pileus fleshy, depressed, obtuse, even, smooth, shining; stem stuffed, equal, short, yellow, as well as the adnate, slightly decurrent, rather distant gills.—*Fr. Epicr.* p. 60. *Berk. Out.* p. 108. *Sow. t.* 366.

In fir woods.

Not found since the time of Sowerby. Pileus 3 in. across, pinkish or tawny. Stem short, yellow.

84. Agaricus (Clitocybe) odoratus. *Bull.* "Sweet Clitocybe."

Dirty green, tough. Pileus fleshy, at length plane, even, subrepand, smooth; stem stuffed, elastic, unequal, smooth, base incrassated; gills adnate, scarcely crowded, broad, pallid.—*Sow. t.* 42. *Price, f.* 70. *Bull. t.* 176, 556, *f.* 3. *Grev. t.* 28. *Fl. Dan. t.* 1611. *Fr. S.M. i.* p. 90. *Eng. Fl.* v. p. 36. *Krombh. t.* 67, *f.* 20-22. *Berk. exs. no.* 6.

In woods. Aug.—Nov. Strong smell of aniseed.

[Carolina, U.S.]

Pileus 3 in. broad, plano-convex, with or without an umbo, smooth, lurid pale green, sometimes here and there whitish, so as to appear zoned, fleshy, but rather watery, flesh dull dirty white, margin not striate, but sometimes transparent, in the young plant inflected, tomentose, gills pale, rather waved, decurrently adnate, the interstices wrinkled. Stem 2 in. high, 4 lines thick, firm, somewhat flexuous, subfibrillose, with a little scattered down, stuffed, attenuated towards the base, which is downy, and furnished with strong-branched, greenish, or whitish roots.—*M. J. B.* Spores nearly spherical $\cdot 00025$ in.—*W. G. S.*

Sect. 3. Pileus white.

85. Agaricus (Clitocybe) cerussatus. *Fr.* "White-lead Clitocybe."

White. Pileus fleshy, convex, then expanded, obtuse, even, moist, soon smooth; stem spongy, solid, tough, elastic, naked;

gills adnate, very crowded, thin, then decurrent, unchanged in colour.—*Fr. Epicr. p. 61. Fl. Dan. t. 1796. Ann. N.H. no. 670.*

In fir woods. April.—Sept. Probably esculent.

Not umbonate as *A. opacus*. Often gregarious. Pileus 2-3 in. broad, a little convex, soon plane, and obtuse, rather shining. Gills not decurrent. Stem 2-3 in. high, somewhat thickened at the base, furnished frequently with fibrillose radicles.—*Fries*. Forming very large rings. Sometimes producing a meruloid hymenium on the top of the pileus.—*M. J. B.* Spores nearly spherical $\cdot 00013$ in.—*W. G. S.*

86. *Agaricus (Clitocybe) phyllophilus.* *Fr.* "Leaf-loving Clitocybe."

White. Pileus fleshy, convex, then plane, soon depressed and umbilicate, even, dry; marked with a white lustre round the margin; stem stuffed, then hollow, spongiose and fibrillose; gills adnate, decurrent, moderately distant, white, then yellowish.—*Epicr. p. 62. Eng. Fl. v. p. 34. Fl. Dan. t. 1847.*

Amongst leaves in woods. Sept. [Carolina, U.S.]

Generally sweet-scented, sub-cæspitose. Pileus 2-3 in. broad, slightly fleshy, when young nearly plane, sometimes repand. Stem 2-3 in. long, obliquely rooted at the base.—*Fries*. Spores $\cdot 00024 \times \cdot 00013$ in.—*W. G. S.*

87. *Agaricus (Clitocybe) pithyophilus.* *Fr.* "Fir-wood Clitocybe."

White; pileus fleshy, thin, becoming plane, umbilicate, smooth, growing pale; stem nearly hollow, round, then compressed, smooth (whitish tomentose at the base); gills adnato-decurrent, crowded, plane, always white.—*Fr. Ep. p. 62. B. & Br. Ann. N.H. (1866) no. 1107.*

In fir woods. Oct. Coed Coch.

Gregarious, sub-cæspitose; pileus 2-3 in. broad, even, smooth, flaccid, dirty white when moist, white when dry.

88. *Agaricus (Clitocybe) candicans.* *Fr.* "Whitish Clitocybe."

White; pileus somewhat fleshy, convex, then plane, or depressed, even, shining, with a thin dead white film; stem sub-fistulose, even, waxy, shining; gills adnate, crowded, thin, at length decurrent.—*Fr. Epicr. p. 63. Bull. t. 575, f. E. Fl. Dan. t. 2021, f. 1. Bolt. f. 17. Eng. Fl. v. p. 36.*

Amongst leaves in woods. [Carolina, U. S.]

Pileus 1 in. across; when moist white, when dry dead white, sub-carnose, tough, regularly deflexed at the margin, rarely sub-deformed; gills rather close; stem 1-2 in high, 1-2 lines thick, nearly equal, incurved at the base, rooted and villous, the rest smooth; aberrant forms numerous.—*Fries*.

89. Agaricus (Clitocybe) dealbatus. P. "Ivory Clitocybe."

White ; pileus rather fleshy, convex, then plane, and revolute, even, smooth, somewhat shining ; stem stuffed, fibrous, thin, equal, sub-pruinose above ; gills adnate, crowded, thin, white.—*Fr. Epicr. p. 63. Eng. Fl. v. p. 36. Sow. t. 123. Cooke, B. F. t. 10 a. Gard. Chron. (1861), p. 312. Smith E. M., f. 27. Hogg & Johnst. t. 10.*

In fir plantations, &c. Esculent.

Gregarious ; pileus 1 in. or more, sometimes cup-shaped, innato-pruinose under a lens, dirty white, cream coloured, or roseate ; gills adnate, at first slightly emarginate, brittle, white, moderately broad ; stem 1 in. high, 2 lines thick, often curved, farinaceous, stuffed, occasionally hollow above when old ; odour fungoid ; spores white, round. A variety sometimes occurs on old mushroom beds, which is caespitose, 1-2 in. or more across, lobed and undulate. Spores $\cdot 00016 \times \cdot 00007$ in.—*W. G. S.*

90 Agaricus (Clitocybe) gallinaceus. Scop. "Acrid Clitocybe."

White, acrid ; pileus somewhat fleshy, convex, then depressed, even, dry, opaque ; stem solid, equal, thin, even ; gills sub-decurrent, crowded, thin.—*Fr. Epicr. p. 63. Bolt. t. 4, f. 2? Huss. 1, t. 39.*

In pastures. Common. Strong odour.

Pileus opaque, dirty white, about 1 in. across ; stem 2 in. in length.

B. Diffformes—pileus irregular.**Sect. 1. Pileus cinereous or dark brown.****91. Agaricus (Clitocybe) elixus. Sow. "Sodden Clitocybe."**

Pileus umbonate, at first convex, at length variously depressed, dingy, minutely tomentose and streaked ; stem even, nearly of the same colour as the pileus ; gills decurrent, distant, white.—*Sow. t. 172. Berk. Outl. p. 109, no. 82. Ann. N.H. no. 264.*

In woods. Oct.

Pileus 2-3 in. across, at first strongly umbonate, obconical, at length flat, or even depressed, with the border flexuous, not the least involute ; disc fuliginous, very minutely virgate, border whitish, with dingy sodden spots, not viscid ; stem 1 in. high, $\frac{3}{8}$ in. thick, or 2 in. high, $\frac{1}{4}$ in. thick, dingy, like the pileus, clothed with matted down, which reaches to the base of the gills, often smooth at the base, which is buried amongst leaves, solid, mottled within, slightly discoloured beneath the cuticle ; gills very distant, decurrent, white, interstices more or less veined.—*M. J. B.*

92. Agaricus (Clitocybe) fumosus. *P.* "Smoky Clitocybe."

Sub-cartilaginous, rigid; pileus fleshy, convex, then expanded, obtuse, even, naked, turning pale, cuticle adnate; stem stuffed, unequal, somewhat pruinose above; gills adnate, rather crowded, grey, or whitish, as well as the stem.—*Fr. Epicr.* p. 56. *Eng. Fl.* v. p. 35. *Pers. Ic. Pict. t.* 7, f. 3-4. *Fr. S. M.* 1, p. 88.

In woods and waste ground. Solitary. [United States.]

Var. polius. densely and connately cæspitose; pileus convex, then plane, obtuse, smooth, grey; stem flexuose, smooth; gills crowded, whitish.—*Fr. Epicr.* p. 57. *Trans. Woolhope Club*, 1868, p. 246. *Saund. & Sm. t.* 13.

On charcoal heaps, in woods, round the wrekin. 1868.

Cæspitose. Pileus 2½-3 in. broad, fleshy, but thin on the margin, more or less wavy, slightly umbonate, with a thick skin, marked with little pits, so as to present the appearance of innate fibrillæ; bistre coloured; gills rather pale, variously adnate, rounded behind, or emarginate, sometimes almost decurrent; stem 1-2½ in. long, ⅜ in. thick, quite smooth, except at the apex, where it is punctato-squamulose, nearly equal, stuffed.—*Eng. Fl.* Spores nearly spherical 00024 in.—*W. G. S.*

Sect. 2. Pileus pallid.

93. Agaricus (Clitocybe) opacus. *With.* "Opaque Clitocybe."

White; pileus fleshy, convex, then expanded, umbonate, repand, even, covered with a floccose shining film; stem stuffed, unequal, flexuose; gills adnate, decurrent, very crowded, white.—*Fr. Epicr.* p. 67. *Sow. t.* 142.

In woods.

Pileus white, opaque, smooth, nearly flat when expanded, but a little turned down at the edge, and a very small protuberance in the centre, cracking when old, and the skin readily peeling off, diameter 1½-2 in.; stem solid, white, cylindrical, 2 in. high, ¼ in. diameter, filled with a watery, and when old with a brownish pith; gills fixed, white, very thick set, and very fine, in pairs or in fours.—*Withering.*

C. Infundibuliformes—pileus funnel-shaped.

Sect. 1. Pileus innately flocculose or silky.

94. Agaricus (Clitocybe) giganteus. *Fr.* "Giant Clitocybe."

Pileus infundibuliform, not umbonate, slightly flocculose, white, opaque; stem equal, thick; gills white, then yellowish, shortly decurrent.—*Fr. Epicr.* p. 67. *B. & Br. Ann. Nat. Hist.* (1865), no. 987.

In very rainy weather on a grassy bank. Aug. Aboyne.

"Pileus slightly viscid when moist, broadly infundibuliform, without any trace of an umbo, 9 in. across, white, opaque; margin incurved, at length sulcate. Stem $2\frac{1}{2}$ in. high, 1 in. thick, equal, obtuse, minutely flocculose; gills at first very narrow, forked behind, decurrent, at length slightly rounded, white, then yellowish."—*B. & Br.*

95. *Agaricus (Clitocybe) maximus.* Fr. "Sowerby's Clitocybe."

Pileus fleshy, thin, sub-flaccid, dry, silky or squamulose, broadly infundibuliform, disc compact, somewhat umbonate; stem stuffed, compact, elastic, attenuated, fibrilloso-striate; gills decurrent, rather crowded, whitish.—*Epicr. p.* 68. *Buxb. iv. t.* 1. *A. giganteus*, *Sow. t.* 244. *Eng. Fl. v. p.* 33. *Huss. i. t.* 79. *Letell. t.* 682. *Hogg. & Johnst. t.* 23.

Meadows and woods. Sept. Esculent. [United States.]

Pileus 4-14 in. broad, fleshy, often splitting at the margin, broadly infundibuliform, the base of the funnel sunk into the stem, with no trace of umbo, dirty white, with an ochraceous tinge, minutely adpresso-squamulose to the naked eye, sometimes guttate, the whole surface under a lens clothed with a fine matted silkiness, margin grooved, the grooves shallow. Gills close, forked, yellow-white, as broad as the flesh of the pileus. Stem $2\frac{1}{2}$ -3 in. high, nearly 2 in. thick at the base, firm, fleshy, elastic, quite solid, sub-bulbous, sometimes attenuated upwards, minutely but conspicuously pubescent, when bruised dirty rufescent. Odour strong.—*M. J. B.* Spores 00022×00013 in.—*W. G. S.*

96. *Agaricus (Clitocybe) infundibuliformis.* Schæff. "Funnel Clitocybe."

Pileus fleshy, thin, at first convex, umbonate, clothed with minute innate silky down, at length funnel-shaped, flaccid; stem stuffed, soft, elastic, thickened downwards; gills decurrent, moderately distant, white.—*Schæff. t.* 212. *Price f.* 69. *Fr. Epicr. p.* 68. *Berk. Outl. t.* 5, *f.* 2. *Eng. Fl. v. p.* 32. *Bull. t.* 286, 553.

On the sides of woods, amongst moss, &c. Common.

Pileus of a pale reddish tan, 2-3 in. across, dry, elastic, at first convex, then umbonate, depressed, or quite infundibuliform, with traces of the umbo, variously crisped and lobed, margin involute and downy, the whole clothed with a delicate closely woven web, which is often pinched up at the margin into little raised striæ, these generally vanish as the pileus becomes completely expanded. Flesh moderately thick in the centre, colour of the pileus. Gills white, attenuated, numerous, unequal, some of them forked at the base. Stem variable in length, 2-9 lines thick, attenuated upwards, elastic, stuffed, paler than the pileus. Odour strong but grateful.—*Eng. Fl.*

Var. membranaceus. *Fr.* In a fir wood. Torquay.—*W. W. S.*

Fries says this well-marked variety is intermediate between *A. squamulosus* and *A. infundibuliformis*, appearing earlier in the year than the latter.

All the parts are thinner, the pileus never at first umbonate, 3 in. across; stem equal, spongy, 4 in. long, $\frac{1}{2}$ in. thick, sometimes cæspitose. Grassy places in woods. Spores pip-shaped, $\cdot00027$ long.—*W. G. S.*

97. *Agaricus (Clitocybe) trullæformis.* Fr. “Bowl-shaped Clitocybe.”

Pileus fleshy, obtuse, at length infundibuliform, floccoso-villose, margin expanded, stem stuffed, elastic, equal, striate; gills decurrent, sub-distant, connected by veins, white.—*Fr. Ep. p. 68. B. & Br. Ann. N.H. (1866), no. 1108.*

In fir woods. Oct. Coed Coch.

The rather distant gills, which are connected by veins and infundibuliform pileus, distinguish this species, which is not hygrophanous.—*B. & Br.*

Sect. 2. Pileus quite smooth.

98. *Agaricus (Clitocybe) geotrupus.* Bull. “Trumpet Clitocybe.”

Pileus fleshy, convex, then broadly infundibuliform, obtuse, umbonate, compact, even, smooth; stem solid, compact, fibrillose, attenuated upwards, flesh white; gills decurrent, crowded, simple, white, at length of the colour of the pileus.—*Bull. t. 573, f. 2. Fr. Epicr. p. 70. Paul. t. 112. Sow. t. 61. Gard. Chron. (1861), p. 734, fig. Huss. i. t. 66. Harz. t. 75. Letell. t. 670. Grev. t. 41. A. infundibuliformis, var. Eng. Fl. v. p. 33.*

In woods and on their borders, often in rings.

[United States.]

Pileus white, tan-coloured, &c., 4 in. broad. Stem 6 in. long, nearly 1 in. thick, $1\frac{1}{2}$ in. at the base, more or less fibrillose, sometimes with broad, transverse, closely-pressed scales. Spores $\cdot00028 \times \cdot0002$ in.

(*Pl. II., fig. 5, reduced.*)

Var. subinvolutus.—*Batsch. f. 204.*

Spores spinulose, nearly spherical, $\cdot0003$ in.—*W. G. S.*

99. *Agaricus (Clitocybe) inversus.* Scop. “Brown-red Clitocybe.”

Pileus fleshy, fragile, convex, then infundibuliform, smooth; margin involute, even; stem stuffed, then hollow, rather rigid, smooth; flesh pallid; gills decurrent, simple, pallid, then of the colour of the pileus.—*Fr. Epicr. p. 71. B. & Br. Ann. N.H. no. 110.* Schæff. t. 65. Bull. t. 553. Paul. t. 66. Sow. t. 186.*

In fir woods. In a ditch.

Woodnewton.

Pileus 2 in. across, not flaccid, brownish red at first, then tan-coloured; often cæspitose. Spores nearly spherical $\cdot0001$ in.—*W. G. S.*

100. Agaricus (Clitocybe) flaccidus. *Sow.* "Flaccid Clitocybe."

Pileus rather fleshy, thin, flaccid, umbilicate, then funnel-shaped, even, margin broadly reflexed; stem stuffed, unequal, sub-flexuose, villous at the base; gills decurrent, crowded, arcuate, yellowish.—*Sow. t.* 185. *Fr. Epicr. p.* 71. *Eng. Fl. v. p.* 32.

In fir woods.

Often densely cæspitose; pileus bright in colour, sometimes streaked; flaccid when young, 2-3 in. broad, always of a peculiar form and substance, orbicular, depressed, rather plane than infundibuliform, by reason of the deflexed margin, very even and smooth, generally reddish, sometimes white; gills very much attenuated behind, very close, tender, and narrow, not running far down; stem 1-2 in. long, 2 lines thick, slender, generally equal, smooth, with a sub-cartilaginous bark, stuffed, soon hollow, not rooting, nor incrassated, and villous, except from peculiarity of situation.—*Fries.* Spores slightly spinulose, nearly spherical '00019 in.—*W. G. S.*

D. Cyathiformes—pileus cup-shaped.

101. Agaricus (Clitocybe) cyathiformis. *Fr.* "Cup-shaped Clitocybe."

Pileus between fleshy and membranaceous, at first depressed, then infundibuliform, even, nearly smooth, moist, hygrophanous; margin for a long time involute, even; stem stuffed, elastic, attenuated upwards, fibrilloso-reticulate; gills adnate, then decurrent, united behind, dingy.—*Fr. Epicr. p.* 73. *Sow. t.* 363. *Huss. ii. t. 1.* *Bull. t.* 575, *f. M. Vaill. t.* 14, *f. 1-3.* *Bolt. t.* 145.

In meadows, &c. Common.

[Cincinnati.]

Pileus 2 in. across, variable in colour, generally dark brown or bistre. Spores '00033 × '00018 in.—*W. G. S.*

102. Agaricus (Clitocybe) brumalis. *Fr.* "Wintry Clitocybe."

Inodorous; pileus between fleshy and membranaceous, at first umbilicate, then funnel-shaped, smooth, flaccid, hygrophanous; margin reflexed, even; stem at length hollow, equal, somewhat incurved, smooth, whitish; gills decurrent, distinct, pallid.—*Fr. Epicr. p.* 76. *Bull. t.* 248, *f. A. B. A. metachrous. Eng. Fl. v. p.* 67.

In woods. Oct.

Livid grey when moist, nearly white when dry; pileus 1-2 in. broad, in its earliest stage conic, gradually depressed, but not deeply infundibuliform, almost membranaceous, margin pellucid; gills of the same colour as the pileus, adnate, scarcely decurrent, not turning pale so fast as the pileus, often separating from the stem at the base; stem 3 in. or more high, at length hollow, outer flesh livid, inner white, downy at the base, minutely fibrillose above, apex pulverulent.—*Eng. Fl.* Spores nearly spherical '00013 in.—*W. G. S.*

E. Orbiformes—pileus rounded.

- 103. Agaricus (Clitocybe) metachrous.** *Fr.* "Ob-conic Clitocybe."

Inodorous; pileus somewhat fleshy, convex, then plane, depressed, rather smooth, hygrophanous; stem stuffed, then hollow, equal, tough, pruinose above; gills adnate, crowded, pale cinereous.—*Fr. Epicr. p. 77.*

In woods amongst leaves.

Pileus 1½-2 in. across, when young cinereous brown, then livid, whitish when dry; stem about 1½ in. long, 2 lin. thick, broader when compressed, grey, frosted with white above; gills adnate, not truly decurrent.

- 104. Agaricus (Clitocybe) fragrans.** *Sow.* "Fragrant Clitocybe."

Fragrant; pileus rather fleshy, convex, then plane, or depressed, even, smooth, hygrophanous; stem stuffed, then hollow, elastic, smooth; gills sub-decurrent, rather crowded, distinct, whitish.—*Sow. t. 10. Fr. Epicr. p. 78. Pers. My. Eur. t. 27, f. 5. Letell. t. 658. Krombh. t. i. f. 34-35. Eng. Fl. v. p. 67.*

In woods. Common. Esculent.

Pileus 1½ in. across, ochraceous, with a sweet anise odour; convex, then plano-convex, minutely dimpled, dirty white, very rarely slightly zoned, when dry nearly white, margin thin and transparent, turned in when young, and minutely tomentose; gills very broad, decurrent, distinct, not pure white; stem 2-3 in. high, 2-3 lines thick, attenuated upwards, minutely fibrillose, villous at the base, sometimes pruinose above.—*M. J. B. Spores '00026 × '00016 in.—W. G. S.*

F. Versiformes—pileus variable.

- 105. Agaricus (Clitocybe) difformis.** *P.* "Deformed Clitocybe."

Pileus somewhat membranaceous, convex, then plane, and sub-umbilicate, smooth, hygrophanous, striate when moist, even when dry, at length between squamulose and rimose; stem hollow, equal, smooth, shining; gills adnate, distant, whitish.—*Fr. Epicr. p. 79. Bolt. t. 17.*

In fir plantations.

Near Halifax.

Stem tough, 2-3 in. long, about 2 lin. thick, smooth, and shining whitish, usually contorted and compressed; pileus variable in form, 1 in. and more broad, when moist striate and livid, silky and shining, whitish when dry.

106. Agaricus (Clitocybe) ectypus. *Fr.* "Copied Clitocybe."

Pileus rather fleshy, plane, at length depressed, and revolute, hygrophanous, finely streaked, with adpressed sooty fibrillæ; margin rather striate; stem becoming hollow, elastic, fibrillose; gills adnate, somewhat distant and pallid, at length stained with red, mealy.—*Fr. Epicr. p. 79.*

In meadows.

Stem 2-4 in. long, 3-5 lin. thick, sub-bulbous, dirty yellowish; pileus about 2-3 in. broad, honey-coloured, then rufescent; margin very thin, striate.

107. Agaricus (Clitocybe) bellus. *Fr.* "Pretty Clitocybe."

Pileus rather fleshy, convex, then depressed (dull orange), sprinkled with minute dark scales; stem stuffed, equal, tough, rivulose; gills adnate, sub-distant, connected by veins, yellowish, reddish brown, at length mealy.—*Fr. Epicr. p. 79. Eng. Fl. v. p. 42.*

In fir plantations. Foetid.

Pileus $2\frac{1}{2}$ in. broad, deep orange brown, becoming gradually pale; gills incarnato-ferruginous; stem $2\frac{1}{2}$ in. high.—*M. J. B.* Often growing in company with *A. laccatus*.

108. Agaricus (Clitocybe) laccatus. *Scop.* "Waxy Clitocybe."

Pileus membranaceous, convex, then depressed, and somewhat umbilicate, variable, hygrophanous, mealy; stem stuffed, equal, tough, fibrous; gills adnate, thick, distant, brightly coloured, at length mealy.—*Fr. Epicr. p. 79. Schæff. t. 13. Bull. t. 570, f. 1. Grev. t. 249. Kromb. t. 43, f. 17-20, t. 72, f. 19-20. Batt. t. 18, G. I. Huss. i. t. 47. Berk. Outl. t. 5, f. 3. Bolt. t. 63-64. Sow. t. 187-208. Fl. Dan. t. 1249. Batsch. f. 99. Eng. Fl. v. p. 41. Price, f. 122.*

In woods. Extremely common and variable. [United States.]

Sometimes of a bright amethyst, usually reddish brown; pileus 1-2 in. broad, convex, the centre more or less depressed, often cracked or squamulose, with a mealy appearance, sub-carnose, turning pale when dry, margin incurved, often very much lobed and waved; gills more or less of the colour of the pileus, not changing colour, horizontal, broad behind, and adnate, thick, distant, sometimes forked above, mealy from the white spores; stem 1-6 in. long, thicker and downy below, fibrillose, tough, hollow, of the colour of the pileus, not becoming pale.—*M. J. B.* Spores globose and echinulate, '00035 in. diameter; echinulate spores are unusual in *Agaricus*.—*W.G.S.*

Sub-Gen. 6. PLEUROTUS. Fr. Epicr. p. 129.



Veil evanescent, or none; pileus fleshy in the larger species, with a smooth or ragged margin from the remains of the veil; substance either compact, spongy, slightly fleshy, or membranaceous; stem mostly lateral or wanting, when present confluent and homogeneous with the hymenophore; gills with a sinus or broadly decurrent tooth.

HAB. Most of the species grow on wood, a few only on the ground.—(*Pl. II., fig. 6, and fig. 37.*)

The species are large, handsome, and polymorphic, but some are small and resupinate; they generally appear late in the year, and return, year after year, to the same habitat more frequently than terrestrial fungi; all are harmless, and some edible. All the species become putrid when old, and never coriaceous or woody.—*W. G. S.*

Sect. 1. Lepiotaria.—pileus scaly.

109. Agaricus (Pleurotus) corticatus. Fr. “Large scaly Pleurotus.”

Pileus compact, excentric, villous, at length floccoso-squamulose; stem firm, fibrillose, veil membranaceous, torn; gills decurrent, sub-distant, anastomosing behind.—*Hym. Suec. p. 236. B. & Br. Ann. N.H. 1865, no. 995. Saund & Sm. t. 4.*

On an old prostrate elm. Oct. Belvoir Castle.

Pileus excentric, 7 inches across, expanded, swollen in the centre; disc, especially in the centre, broken up into brownish grey silky scales, which are more minute towards the thin, strongly involute margin; veil woven, adhering slightly to the stem and margin; stem 3 in. high, $1\frac{1}{2}$ in. thick, pitted and silky below the evanescent ring, firm and tough, mottled; gills rather broad, pure white, very decurrent, anastomosing behind, sometimes forked; edge entire. Smell rather strong; a large and noble species, perhaps too closely allied to *A. dryinus*.—*B. & Br.* Spores 0005×0002 in.

110. Agaricus (Pleurotus) dryinus. P. “Spotted Pleurotus.”

Pileus compact, hard, oblique, variegated with dark spot-like scales; veil fugaceous, torn, white, appendiculate; stem lateral, stout; gills decurrent, narrow, nearly simple.—*Fr. Epicr. p. 129. Nees. f. 177. Huss. ii. t. 29-33. Vent. t. 44, f. 1-2. Schæff. t. 233. Eng. Fl. v. p. 70. Gard. Chron. (1860) p. 832.*

On trunks of ash, willow, &c. Oct. [U. States.]

Pileus $\frac{3}{4}$ -3 in. broad, excentric, white, the surface broken into light brown adpressed scales, margin involute, with fragments of the broad woven veil adhering to it, flesh continued into the stem; gills white, not very broad, decurrent, forked, crisp; stem 3 in. high, attenuated downwards, firm, almost woody, tomentose, but not scaly. Taste like *Ag. campestris*. Spores $\cdot 00013 \times \cdot 00017$ in.

111. *Agaricus (Pleurotus) spongiosus.* Fr. "Spongy Pleurotus."

Pileus pulvinate, soft and spongy, sub-tomentose, veil torn, fugacious, appendiculate; stem very short, excentric, tomentose; gills sinuate, adnate, crowded, white.—*Fr. Epicr. p. 130.*

In a rotten beech. Oct. Epping Forest.—*W. G. S.*

Sub-sessile, thick, pileus cinereous, with the habit of *Polyporus betulina*, 2-3 in. broad, persistently tomentose. Spores $\cdot 0004 \times \cdot 00018$ in.

(*Pl. II., f. 6, reduced.*)

Sect. 2. Concharia.—pileus shell-shaped.

112. *Agaricus (Pleurotus) ulmarius.* Bull. "Elm Pleurotus."

Pileus fleshy, compact, convexo-plane, smooth, somewhat spotted, moist; stem rather excentric, stout, thickened below, sub-tomentose; gills adnexed (emarginate or rounded), rather crowded, broad, whitish.—*Fr. Epicr. p. 130. Bull. t. 510. Sow. t. 67. Vitt. Mang. t. 23. Cooke, B.F. t. 7. Eng. Fl. v. p. 73. Price. f. 83.*

On elm trunks. Sept.—Dec. Esculent. [United States.]

Pileus 3-12 in. broad, obtuse, smooth, subcoriaceous, but within very white, soft, yet compact, thick, sometimes marbled with livid spots; gills numerous, broad, white, adnate or sub-decurrent, irregular; stem excentric ascending 2-3 in. long, about 1 in. thick, solid, firm, incrassated at the base, white, sometimes furfuraceous, single or in tufts, varying a good deal in texture.—*Grev.* Spores nearly globular, length $\cdot 0002$ in.

113. *Agaricus (Pleurotus) subpalmatus.* Fr. "Subpalmate Pleurotus."

Pileus fleshy, soft, convexo-plane, obtuse, even, smooth; stem excentric, incurved, equal, fibrilloso-striate; gills adnate, crowded, broad, rufescent.—*Fr. Epicr. p. 131. Sow. t. 62. A. palmatus. Eng. Fl. v. p. 73.*

On squared timber, old trunks, &c.

Pileus 3-4 in. broad, excentric, at first convex, the margin involute, then more expanded; cuticle thick, tough, elastic, gluey, but not moist, not easily separable from the flesh, distilling drops of a limpid reddish fluid, with a hot and astringent styptic taste, margin beautifully reticulated, of a pale orange buff or nankeen colour, pruinose, very fleshy, flesh mottled; gills paler, rounded behind, connected by veins, free, joined at the base by an obsolete collar. Stem 1-2 in. high, $\frac{1}{2}$ in. thick, oblique, thickest below, smooth, whitish, of a fibrous structure, sometimes a little hollow.—*M. J. B.* Spores slightly echinulate, $\cdot 00017 \times \cdot 00023$ in.

114. *Agaricus (Pleurotus) craspedius.* Fr. "Thick-stem Pleurotus."

Pileus fleshy, soft, convexo-plane, or depressed, undulato-lobate, sub-pruinose; stem solid, excentric, short; gills adnate, scarcely crowded, broad, whitish.—*Fr. Epicr. p. 131. Paul. t. 44, f. 3. Fl. Dan. t. 891. Saund. & Sm. t. 7.*

On the trunks of trees.

Cæspitose. Stem elastic, spongy within, unequal, pallid. Pileus more or less excentric, 3-5 in. broad, brick-red, pale tan, or greyish; margin at first involute, then opened, crenately lobed and waved, and fimbriate.

115. *Agaricus (Pleurotus) fimbriatus.* Bolt. "Fringed Pleurotus."

Pileus fleshy, thin, plane, then funnel-shaped, even, hygrophanous; margin at length sinuate and lobed; stem somewhat excentric, stuffed, compressed, firm, short, rootless, villous; gills adnate, thin, much crowded, slightly forked, white.—*Fr. Epicr. p. 131. Bolt. t. 61. Sterb. t. 15, B. Ann. N.H., no. 672*. Eng. Fl. v. p. 37.*

On trunks. Rare.

Gregarious, or tufted. Pileus 3 in. broad, slightly fleshy, plano-convex when young, often excentric; turning pale; gills very close, narrow and tender, often forked; stem about 1 in. long, smooth.—*Fries.* Most beautifully and repeatedly lobed and fimbriated.—*M. J. B.*

116. *Agaricus (Pleurotus) lignatilis.* Pers. "Beech Pleurotus."

Pileus fleshy, firm, convexo-plane or somewhat umbilicate, floccoso-pruinose; stem stuffed, then hollow, flexuose, sub-villous; gills adnate, crowded, narrow, white.—*Pers. Syn. p. 368. B. & Br. Ann. N.H. (1865), no. 996. Fl. Dan. t. 1797. Saund. & Sm. t. 6.*

On beech trees. Burnham Beeches, abundant in 1863.

With a strong mealy odour. Stem sometimes 2-3 in. sometimes only 3-4 lines long, thin, unequal, pileus usually more or less excentric, from 1 to 3-4 in. broad, repand, undulately lobed. Spores $\cdot 00015 \times \cdot 00012$ in.

117. Agaricus (Pleurotus) circinatus. *Fr.* "Circinate Pleurotus."

Pileus fleshy, convexo-plane, obtuse, orbicular, glistening, slightly silky, becoming whitish; stem stuffed, elastic, short, equal, smooth, rooting; gills adnate (sub-decurrent), crowded, white.—*Fr. Epicr. p. 132. Secr. no. 670.*

On rotten wood. W. W. Saunders, Esq.

Solitary, beautifully regular, sub-central, tough, wholly white, not hygrophanous, odour faint, not mealy; stem 1-2 in. long, 3-4 lines thick; pileus about 3 in. broad.

118. Agaricus (Pleurotus) ostreatus. *Jacq.* "Oyster Pleurotus."

Pileus soft, fleshy, sub-dimidiolate, conchate, ascending, growing pale; stem abbreviated (or obsolete), firm, elastic, strigose at the base; gills decurrent, rather distant, anastomosing behind, whitish.—*Fr. Epicr. p. 133. Huss. ii. t. 19. Sow. t. 241. Letell. t. 695. Vitt. Mang. t. 4. Lenz. f. 19. Vent. t. 17, f. 3-4, t. 18. Krombh. t. 41, f. 1-7. Tratt. essb. Sch. t. O. Tratt. Austr. t. 40. Cooke, B.F. t. 8. Smith, E.M. f. 17. Jacq. Austr. t. 288. Eng. Fl. v. p. 71. Badh. i. t. 2, ii. t. 10. Hogg. & Johnst. t. 21.*

On trees, especially laburnum. Autumn and winter. Esculent. [United States.]

Imbricated, large; pileus sub-dimidiolate, very thick and fleshy, flesh white, dusky towards the surface, 1 in. deep, the border at first fibrillose, or squamulose, margin involute; as the pileus expands the white fibrillæ vanish, and the colour changes from dusky to bistre; margin paler and rimulose, the whole surface shining and satiny when dry, soft and clammy when moist, towards the base in age there is a little white down; gills broad, here and there forked, anastomosing at the base, dirty white, the edge serrated, umber. In large specimens there is often a distinct stem, clothed with a dense short white down, which runs up between the gills; when dry the pileus becomes pallid or yellowish.—*M. J. B.* Spores $\cdot 0003 \times \cdot 00015$ in.

119. Agaricus (Pleurotus) salignus. *Fr.* "Willow Pleurotus."

Pileus compact or spongiose, sub-dimidiolate, horizontal, at first pulvinate, even, then with the disc depressed, sub-strigose; stem short, white, tomentose; gills decurrent, somewhat branched, eroded, distinct at the base, nearly of the same colour.—*Fr. Epicr. p. 133. Letell. t. 687. Tratt. Austr. t. 4, f. 8. Paul. t. 22, Eng. Fl. v. p. 72.*

On trunks of trees. Oct.—Jan. [United States.]

Pileus convex, 4-6 in. broad, stem excentric or lateral, sometimes obsolete; fuliginous, white, or ochraceous, according to its stage of growth.—*Fries.* Spores $\cdot 00036 \times \cdot 00015$ in.—*W. G. S.*

Sect 3. Holopleurus.—pileus dimidiate.

120. Agaricus (Pleurotus) petaloides. *Bull.* "Petaloid Pleurotus."

Ascending; pileus fleshy, spathulate, entire, disc villous, depressed; stem compressed, villous; gills decurrent, crowded, narrow, whitish.—*Fr. Epicr. p.* 134. *Bull. t.* 226, 557. *Vent. t.* 44, f. 5, 6. *Pers. Obs. t.* 4, f. 1. *Eng. Fl. v. p.* 72.

On the ground, amongst grass. Rare. [United States.]

Gills whitish, tender, decurrent; stem flat, often channelled, nearly erect; solitary, stem about 1 in. long, erect.—*Parson.* Spores $\cdot 0003 \times \cdot 00015$ in.—*W. G. S.*

121. Agaricus (Pleurotus) serotinus. *Schrad.* "Yellowish Pleurotus."

Pileus fleshy, compact, viscid; stem lateral, thick, squamulose, with sooty points; gills determinate, crowded, yellowish, or pallid.—*Spic. p.* 140. *B. & Br. Ann. N.H.* 1865, no. 997. *Fl. Dan. t.* 1293, f. 2. *Buxb. v. t.* 2, f. 2.

On trunks of trees. Jedburgh. Bowood. [United States.]

Gregarious; pileus 2-3 in. across, yellowish, or dingy olive, reniform, or obovate, margin at first slightly involute, then repand; flesh whitish, insipid.

122. Agaricus (Pleurotus) mitis. *P.* "Kidney-shaped Pleurotus."

Pileus rather fleshy, tough, reniform, even, smooth, growing pale; stem lateral, compressed, dilated upwards, with little white scales; gills determinate, crowded, distinct, white.—*Fr. Epicr. p.* 135. *Berk. Outl. t.* 6, f. 9. *Eng. Fl. v. p.* 74. *Mag. Zool. & Bot. no.* 48.

On dead larch. Oct. Scotland. Notts.

Pileus $\frac{1}{2}$ in. broad, at length almost sessile; gills distinct from the horizontal stem, very close, linear-lanceolate, pallid-whitish.—*Fries.* Firm, tasteless, white, or rufescent, in the young state spathulate, and the stem quite distinct, the pileus gradually dilates, the stem becomes obsolete, and the pileus reniform, the outer margins meeting, and the one overlapping the other; upper stratum gelatinous.—*M. J. B.*

123. Agaricus (Pleurotus) tremulus. *Schæff.* "Grey Pleurotus."

Pileus rather fleshy, reniform, depressed, tough, even; stem marginal, distinct, nearly round, ascending, villous; gills adnate, determinate, narrow, distant, grey.—*Fr. Epicr. p.* 135. *Schæff. t.* 24 (except fig. 1.) *Sow. t.* 242. *Eng. Fl. v. p.* 74.

Amongst moss. Rare. Malvern Hills. Scotland. Denbighshire. [United States.]

About 1 in. across ; grey, turning pale, sometimes sessile, the base villous ; gills distinct, distant.

124. *Agaricus (Pleurotus) acerosus.* Fr. "Lawn Pleurotus."

Pileus membranaceous, reniform, plane, striate, sub-lobate, hygrophanous ; stem very short or obsolete, lateral, rather strigose at the base ; gills determinate, narrow, crowded, simple, grey.—*Fr. Epicr. p. 135. Bolt. t. 72, f. 3. Ann. N.H. no. 673.*

On gravel, lawns, wood, &c. Rare. Hitchen, Suffolk.

Pileus membranaceous, striate, when moist grey, when dry silky white, very variable, 1-2 in. broad ; gills horizontal, not decurrent, of the same colour as the pileus. Spores nearly globose, .0002 in.

Sect. 4. Omphalaria—pileus at first resupinate.

125. *Agaricus (Pleurotus) porrigens.* P. "Pine Pleurotus."

White ; pileus fleshy, tough, at first resupinate, then ascending from the extended base, ear-shaped, smooth above ; gills very narrow, linear.—*Fr. Epicr. p. 136. Eng. Fl. v. p. 72.*

On old pine trunks. Rare. Inverary.

Imbricated, various in size, sub-flaccid, the base stretching forward, often tomentose, very rarely stipitate ; pileus even, margin thin, inflexed, lobed in large specimens ; gills when young vein-like, somewhat divided.—*Fries.*

126. *Agaricus (Pleurotus) septicus.* Fr. "Thin Pleurotus."

White ; pileus somewhat fleshy, thin, resupinate, then reflexed, even, pubescent ; stem thin, incurved, pubescent, at length evanescent ; rootlets byssoid ; gills distant.—*Fr. Epicr. p. 136. Sow. t. 321. Eng. Fl. v. p. 74. Letell. t. 706.*

On twigs, decayed fungi, dung, &c.

Pileus 3-5 lines broad, at length free, slightly carnose ; gills rather broad, distinct ; stem 2 lines high, attenuated upwards, sometimes obsolete, as well as its radicles.—*Fries.*

127. *Agaricus (Pleurotus) mastrucatus.* Fr. "Imbricated Pleurotus."

Pileus fleshy, upper stratum gelatinous, at first resupinate, then expanded, sessile, lobed, squamulose ; gills greyish white.—*Fr. Epicr. p. 137. Sow. t. 99. Eng. Fl. v. p. 74.*

On old trunks. Rare. [Cincinnati.]

Imbricated ; pileus 1-4 in. across, lobed in large specimens, flaccid, rough with hairs, and rigid points intermixed ; gills radiating from a downy knob.—*Fries.*

- 128. Agaricus (Pleurotus) atrocæruleus.** *Fr.* "Blue-black Pleurotus."

Pileus fleshy, upper stratum gelatinous, at first resupinate, then obovate, reniform, tomentose; gills crowded, white, becoming yellowish.—*Fr. Epicr. p. 137. Schæff. t. 246, f. 3, 8, 9. Ann. N.H. no. 674. Saund. & Sm. t. 6.*

On trunks. Rare. Penzance.

Pileus at first resupinate, soon reflexed, obovate or kidney-shaped, 1-2 in. broad, villous, rugulose when dry, commonly dark bluish, rarely brown; flesh soft, upper stratum gelatinous. Spores $\cdot 0003 \times \cdot 00013$ in.

- 129. Agaricus (Pleurotus) algidus.** *Fr.* "Dingy Pleurotus."

Pileus fleshy, cuticle gelatinous, at first resupinate, then expanded, reniform, smooth; gills rather broad, crowded, pale, yellowish.—*Fr. Epicr. p. 137. Fl. Dan. t. 1552, f. 1, t. 1556, f. 2. Pers. M.E. t. 23, f. 5.*

On trunks. Linlithgowshire. [United States.]

Pileus about 1 in. across, reddish umber or cinereous, usually cæspitose and imbricated, somewhat kidney-shaped, smooth, viscid when young.

- 130. Agaricus (Pleurotus) Leightonii.** *Berk.* "Leighton's Pleurotus."

Pileus at first obliquely conical, umber, then lead-coloured, furfuraceous, with short scattered bristles intermixed; upper stratum gelatinous; gills rather thick, tan-coloured, distant, somewhat forked at the base, slightly undulated; interstices scarcely reticulated.—*Ann. Nat. Hist. xiii. t. 9, f. 1. Berk. Outl. p. 138.*

On wood. Near Shrewsbury.

Pileus 5 lines broad, at first cyphellæform, obliquely conical, umber brown, gradually becoming paler, at length of a pallid lead colour, furfuraceous, especially behind, where there are a few bristles; flesh consisting of two distinct strata, of which the upper is gelatinous, and of the colour of the pileus, the lower white. Stem, none; gills of a pallid tan colour, thickish, distant, undulated, obscurely wrinkled at the base, the interstices scarcely reticulated.—*M. J. B.*

- 131. Agaricus (Pleurotus) cyphellæformis.** *Berk.* "Pendulous Pleurotus."

Pileus cup-shaped, then dependent, upper stratum gelatinous, cinereous, very minutely strigose, especially at the base; margin paler, sprinkled with a few meal-like scales; gills pure white, rather distant, narrow, linear.—*Mag. Zool. & Bot. i. t. 15, f. 3. Berk. Outl. p. 138.*

On dead stems of herbaceous plants. Oct.

Gregarious. Pileus 2 lines or more broad and high, altogether stemless, cup-shaped, hanging down, cinereous, very minutely strigose, especially at the base; margin paler, sprinkled with a few meal-like scales. Upper stratum gelatinous, cinereous, beneath which the flesh is white and very thin. Gills pure white, rather distant, the alternate ones shorter, narrow, linear.—*M. J. B.*

132. *Agaricus (Pleurotus) Hobsoni.* Berk. “Hobson’s *Pleurotus*.”

Pileus membranaceous, reniform, or dimidiate, stemless, pale-grey, minutely downy; gills rather distant, pallid.—*Berk. Outl. p. 139.*

On larch stumps. Sept. Apethorpe.

Pileus 1-4 lines across; margin involute.

133. *Agaricus (Pleurotus) applicatus.* Batsch. “Little grey *Pleurotus*.”

Dark cinereous; pileus submembranaceous, rather firm, resupinate, then reflexed, somewhat striate, sub-pruinose, villous at the base; gills loose, paler.—*Fr. Epicr. p. 137. Batsch. f. 125. Sow. t. 301. Eng. Fl. v. p. 75. Bull. t. 581, f. 2. Pers. M.E. i. t. 28, f. 8.*

On dead fallen branches. Common. [S. Carolina.]

Pileus about $\frac{1}{2}$ in. across, when young cup-shaped, resupinate, slightly carnose, striate when moist, more or less villous; gills broad, distant, radiating, grey, the margin whitish, stem none.—*M. J. B. (fig. 37, nat. size.)*

134. *Agaricus (Pleurotus) striatulus.* Fr. “Striate *Pleurotus*.”

Pale cinereous. Pileus very delicate, striate, flaccid, smooth; gills few, distant.—*Fr. Epicr. p. 137. Eng. Fl. v. p. 75.*

On firwood, hazel twigs, &c. Scotland. [S. Carolina.]

Scattered or gregarious, persistent. Pileus 3-4 lines broad, convex, wrinkled when dry; gills few, unequal, distant, sometimes dirty-white, sometimes the whole plant is brown.—*Fries.*

135. *Agaricus (Pleurotus) hypnophilus.* P. “Moss *Pleurotus*.”

Resupinate, flat, white; pileus sub-reniform, nearly smooth; gills simple.—*Pers. M.E. iii. t. 24, f. 5 a. Berk. Outl. p. 139. Eng. Fl. v. p. 75.*

On the larger mosses and fallen leaves. Appin.

Exactly the habit of *A. variabilis*, but the spores are white, and in consequence the gills do not change colour.

136. *Agaricus (Pleurotus) chioneus.* P. “Snowy *Pleurotus*.”

Snow-white, sub-resupinate, minute; pileus very thin, villous; gills rather broad; stem very short, villous, at length obsolete.—*Pers. M.E. iii. t. 26, f. 10-11. Berk. Outl. p. 139. Eng. Fl. v. p. 75.*

On wood or dung. Rare. Lytchett, Dorset.

Pileus 2 lines broad, extremely delicate and fragile, clothed with white down, fixed by a few downy threads, the margin involute; gills radiating, distant, with sometimes a single smaller one in the interstices.—*M. J. B.*

Sub-Gen. 7. COLLYBIA, Fr. Epicr. p. 81.

Pileus at first convex, with an involute margin; stem with a cartilaginous bark, of a different substance from the hymenophore, but confluent with it; gills adnate or slightly attached (not decurrent).

HAB. Most of the species are epiphytal.—(*Pl. II., fig. 7.*)

Usually small and tough, lasting far into the winter; few only are known to be edible, as *A. fusipes*, *Bull.* *A. esculentus*, *Wulf*, &c. *Marasmius* is closely allied to *Collybia*.

Sect. 1. Stricpedes—stem sulcate, fibrillose, or striate.

137. *Agaricus (Collybia) radicans.* Relh. “Rooting *Collybia*.”

Pileus fleshy, thin, convex, then plane, wrinkled, glutinous; stem stuffed, tall, attenuated upwards, rooting, rigid, smooth; gills adnexed, distant, white.—*Fr. Epicr. p. 81. Sow. t. 48. Gard. Chron. 1860, p. 265. Grev. t. 217. Krombh. t. 62, f. 6-10. Paul. t. 97, f. 3-4. Berk. Outl. t. 5, f. 4. Eng. Fl. v. p. 44. Huss. i. t. 15. Price, f. 98. Vent. t. 56, f. 1-2.*

On old stumps, &c. Very common. [United States.]

Pileus 3-4 in. across, flat, more or less umbonate, radiato-rugose, smooth, at first slimy, carnose, tough and elastic, delicate, fusco-ochraceous, olivaceous, &c., often irregular; gills white, thick, distant, ventricose, adnate, with or without a tooth, sometimes almost decurrent; stem 4-8 in. high, about $\frac{3}{8}$ in. thick, attenuated upwards, twisted, not smooth, but rather furfuraceous, sometimes striate above with raised lines, paler than the pileus, juicy, brittle, splitting longitudinally, sometimes tough, at length hollow, rufescent within, penetrating very deeply into the ground by a fusiform root.—*M. J. B.* Spores 00041×00068 in.

138. *Agaricus (Collybia) longipes.* Bull. “Long-stemmed *Collybia*.”

Pileus fleshy, thin, conical, then expanded, umbonate, dry, slightly velvety; stem stuffed, tall, attenuated upwards, villose, at length sulcate; root long, fusiform; gills rounded behind, rather distant, white.—*Bull. t. 232. Fr. Epicr. p. 81. Huss. i. t. 80. Batt. t. 20, f. A. Corda. Sturm. t. 52. Ag. pudens, Ann. N.H. no. 64.*

On old stumps, &c.

Stem quite as velvety as in *A. velutipes*, and the pileus, especially its margin, more or less so, and by no means glutinous.

139. Agaricus (Collybia) platyphyllus. Fr. "Broad-gilled Collybia."

Pileus between fleshy and membranaceous, becoming plane, obtuse, moist, streaked with little fibres; stem stuffed, equal, soft, naked, striate, pallid, ending abruptly; gills truncate, adnexed distant, broad, white.—Fr. *Epicr.* p. 82. *Bull. t.* 594. *Paul t* 97, f. 1-2. *Buxb.* iv. t. 18. *Ann. N.H.* nos. 263, 323.

In woods, amongst leaves. Rare. [S. Carolina.]

Pileus 5 in. or more across, smooth, hygrophanous, expanded, with a broad umbo, sinuated and undulate, thin, except in the centre, umber shaded with bistre, more or less virgate, but by no means silky, though it has a sleek shining aspect, flesh brownish beneath the sub-cartilaginous cuticle, in other parts firm and white; stem $2\frac{1}{2}$ in. high, $\frac{1}{8}$ in. thick, nearly equal, obtuse, stringy, slightly twisted, streaked, smooth, not rooting; gills broad, truncato-adnexed, at first white, at length pallid, distant, smell strong, taste not unpleasant.—*M. J. B.*

The variety (*A. repens*), with a stout creeping mycelium, has also been found in Britain.—(*Gard Chron.*, 1861, p. 926, fig.) Spores $\cdot 0005 \times \cdot 0007$ in.

140. Agaricus (Collybia) fusipes. Bull. "Spindle-stem Collybia."

Tough; pileus fleshy, convex, then plane, smooth, even, or rimose, umbo evanescent; stem stuffed, then hollow, contorted, swollen, sulcate, fusiform and rooting; gills adnexed, nearly free, at length separating behind, broad, distant, connected by veins, white, then the colour of the pileus.—Fr. *Epicr.* p. 83. *Bull. t.* 106, 516, f. 2. *Sow. t.* 129. *Vent. t.* 19, f. 5-7. *Krombh. t.* 42, f. 9-11. *Schæff. t.* 87-88. *Fl. Dan. t.* 1607. *Batt. t.* 20, B. *Berk. Outl. t.* 5, f. 5. *Huss. ii. t.* 48. *Cooke, B.F. t.* 5. *Eng. Fl. v. p.* 45. *Price, f.* 85. *Hogg. & Johnst. t.* 14.

On stumps. Very common. Esculent.

Densely tufted; pileus $1\frac{1}{2}$ in. or more broad, when young hemispherical, smooth, dull vinous brown, fleshy; margin incurved, then expanded, cracked, sometimes tessellated and warty, paler, but here and there towards the margin marked with dark patches, as if burnt; gills pale, umber, free, or only apparently adnate, sometimes rounded behind, and then separating from the stem, with a rather watery appearance, though dry, connected by veins, distant; stem 2-6 in. long, $\frac{1}{2}$ -1 in. thick, ventricose, rooting, paler than the pileus, marked towards the base with little dark specks, striate longitudinally, often cracked; substance within loose and fibrous, at length hollow; taste agreeable.—*M. J. B.* Spores $\cdot 0002 \times \cdot 00013$ in.

Var. ædematopus. Fr. Gills unequally decurrent, pallid.—*Pall. Ross. i. t.* 9, f. 2. (*Pl. II. f.* 6, reduced.)

141. Agaricus (Collybia) maculatus. *A. & S.* "Spotted Collybia."

Pileus fleshy, compact, convex, then plane, obtuse, even, smooth; stem stout, ventricose, striate, attenuated below, abrupt; gills free, crowded, rather linear, white, as well as the stem.—*Fr. Epicr. p. 84. Sow. t. 246. Huss. ii. t. 60. Eng. Fl. v. p. 45.*

In fir woods. Not common.

Pileus 2-3 in. across, at first white, then spotted, as well as the stem, with reddish brown, even, smooth, truly carnose, rather compact, hemispherical, at first with an involute margin, then quite plane, margin often repand, white, here and there spotted with rufous, at length altogether dirty rufous; gills free, very close, narrow, scarcely above 2 lines broad, linear, dirty pallid; stem 3-4 in. high, but much drawn out when growing amongst moss, 4-10 lines thick, stout, unequal, more or less ventricose and attenuated below.—*Fries.* Spores nearly globular, length '0002 in.

(*Pl. II., fig. 6, small figure.*)

142. Agaricus (Collybia) butyraceus. *Bull.* "Buttery Collybia."

Pileus fleshy, convex, then expanded, umbonate, even, smooth, moist, changing colour, flesh becoming white; stem stuffed, externally cartilaginous, conical, striate, reddish brown; gills nearly free, crowded, crenulate, white.—*Fr. Epicr. p. 84. Bull. t. 572. Buxb. iv. t. 5. f. 1. Batt. t. 16, C. Eng. Fl. v. p. 46.*

In woods, especially of fir. Common. [S. Carolina.]

Pileus 1½ in. broad, sub-carnose, convex, expanded, umbonate, sub-viscid, of a livid ochre, or dull green, when quite young of a livid brown, the margin sub-rufescent, but a portion below the umbo soon grows pale, so that the pileus appears of four colours; the umbo always dark, sometimes the rest of the pileus is pale, rufescent, or ochraceous, margin occasionally striate, flesh white, mottled with rufous; gills close, free, not ventricose, rounded, edge rather uneven and notched; stem 1½-2 in. high, ⅔ in. thick below, somewhat twisted, smooth, slightly striate, downy at the bulbous base, stuffed, white within, outer coat of a different structure and pubescent.—*M. J. B.*

Sect. 2. Velutipedes—stem velvety, floccose, or pruinose.

143. Agaricus (Collybia) velutipes. *Curt.* "Velvet-stemmed Collybia."

Pileus fleshy, thin, convex, then plane, obtuse, smooth, viscid; stem stuffed, velvety, rooting, dark-bay; gills adnexed, distant, yellowish.—*Fr. Epicr. p. 86. Curt. Fl. L. t. 70. Huss. i. t. 56. Bolt. t. 135. Krombh. t. 44, f. 6-9, t. 62, f. 21. Tratt. Austr. t. 7. Batsch. f. 122. Paul. t. 104, f. 5-6. Cooke exs. no. 301. Vent. t. 25. f. 3-4. Batt. t. 22 C. Eng. Fl. v. p. 44. Vaill. t. 12, f. 8-9. Bull. t. 344, 519, f. 2.*

On logs and trunks of trees. Common. [United States.]

Cæspitose; pileus 1-3 in. broad, smooth, slimy, of a beautiful tawny colour, convex, expanded, fleshy, margin thin, sub-transparent; gills ventricose, broad, scarcely adnate, ochraceous; stem 2-9 in. high, $\frac{3}{8}$ in. thick, incurved, velvety, rich tawny brown, pale above, often compressed and striate, fistulose.—*M. J. B.* Spores variable in size, nearly globular, average length, '00027 in.

144. Agaricus (Collybia) caulicinalis. *Bull.* "Thatch Collybia."

Pileus somewhat fleshy, convex, then plane, umbilicate, clothed with velvety scales, or fibrillose; stem stuffed, then fistulose, tough, more or less hairy; gills separating, then free, ventricose, rather distant, white.—*Bull. t. 522, f. 2. A. stipitarius. Fr. Epicr. p. 87. Alb. & Sch. t. 9, f. 6. Berk. Outl. t. 5, f. 1. Huss. i. t. 68.*

On grass, old thatch, twigs, &c. [United States.]

Pileus clothed with tawny or brown hairs, or fibres, which sometimes form scales, 4-5 lines broad; stem 1-2 in. long, tough, bright brown.

145. Agaricus (Collybia) confluens. *P.* "Confluent Collybia."

Pileus somewhat fleshy, convex, then plane, obtuse, flaccid, smooth, hygrophanous; stem fistulose, slightly compressed, rufous, clothed with white, pulverulent down; gills remote, free, narrow, very crowded, whitish.—*Fr. Epicr. p. 88. Pers. Ic. Pict. t. 5, f. 1. Buxb. iv. t. 20. Batsch. f. 104. Eng. Fl. v. p. 46.*

Amongst leaves in woods. Common. [United States.]

Pileus 1 in. across, reddish brown, in rings or confluent masses; gills leaving a distinct area round the top of the stem; stems adhering to each other; densely tufted, at first convex, at length expanded, obsoletely umbonate, more or less irregular and compressed, the margin when fresh finely striate; gills distinct, perfectly free, linear, finely serrulate, pale, changing to cream colour; stem 2 in. high, or more, above 1 line thick, compressed, thickest upwards, pale rufous below, the whole covered with white mealy pubescence, not strigose.—*M. J. B.*

146. Agaricus (Collybia) ingratus. *Schum.* "Unpleasant Collybia."

Pileus rather fleshy, globose, campanulate, or convex, umbonate, even; stem fistulose, long, contorted, rather compressed, pulverulent or downy, especially above, umber below; gills free, narrow, very crowded, pallid.—*Fr. Epicr. p. 88. Berk. Out. p. 117.*

Var. B. Pileus convex, obtuse; stem villosopulverulent.—*Berk. Out. p. 117.*

In woods.

Differs principally from *A. confluens* in the gills not leaving a free space round the top of the stem.—*M. J. B.*

- 147. *Agaricus (Collybia) vertirugis.* Cooke. "Wrinkled Collybia."**

Pileus tough, thin, radiato-rugose, minutely pulverulent, campanulate, then convex, at length plane; stem minutely velvety, strigose at the base, fistulose; gills adnate, white, with a yellowish tinge, connected by veins.—*Ag. undatus*. Berk. *Outl.* p. 117, no. 107. *Eng. Fl.* v. p. 51.

On dead fern roots.

Pileus not exceeding 1 in. across, dull brown, or cinereous, campanulate, at length convexo-plane, wrinkled in the direction of the gills, tough, sub-membranaceous, minutely pulverulent; gills truly adnate, ascending or horizontal, moderately distant, connected by veins, white, with a yellowish tinge; stem 2-2½ in. high, ½-1 line thick, strigose at the base, rufous, minutely velvety, fistulose, sometimes compressed.—*M. J. B.*

As *Ag. undatus* Fries. has precedence of this species, the name adopted by the Rev. M. J. Berkeley must be given up, and we therefore substitute another. According to custom this would be *Ag. Berkeleyi*, if that name had not already been adopted for an Indian species.

- 148. *Agaricus (Collybia) conigenus.* P. "Fir-cone Collybia."**

Pileus somewhat fleshy, nearly plane, unequal, sub-umbonate, smooth; stem minutely fistulose, tough, pulverulent, becoming pallid, root strigose or fibrillose; gills free, narrow, much crowded, becoming pallid.—*Fr. Epicr.* p. 89. *Buxb.* i. t. 57, f. 2. *Sow. t.* 206. *Eng. Fl.* v. p. 50.

On fir cones. Oct. Nov.

Pileus about 1 in. across, reddish brown at first, pallid when dry, rather irregular, umbonate, expanded, often depressed, sometimes quite smooth, occasionally more or less lanato-pubescent, sometimes tinged with chocolate; flesh woolly when dry, firm when moist; gills very numerous, linear, free, or only adnexed, tinged with yellow, or of the colour of the pileus, the unequal ones very long; stem variable in length, ½-1½ lines thick, tough, pulverulent-pubescent, with a long, very strigose, rooting base, rufous, hollow, woolly inside.—*M. J. B.* Spores .0001 × .00015 in.

- 149. *Agaricus (Collybia) cirrhatus.* Schum. "Cirrhate Collybia."**

Pileus rather fleshy, plane, silky, at length umbilicate; stem slightly fistulose, flexuose, equal, pallid, pulverulent; root twisted, fibrillose; gills adnate, crowded, narrow white.—*Fr. Epicr.* p. 90. *Batsch. f.* 95. *Berk. Out.* p. 117.

Amongst leaves, &c.

[Cincinnati.]

Often attached to a little yellowish, nodular *Sclerotium*. Stem 1-2 in. long, filiform, pallid; pileus 5-6 lin. broad, rather silky, at length finely and concentrically rivulose, opaque, white.

150. Agaricus (Collybia) tuberosus. Bull. "Tuberous Collybia."

White; pileus slightly fleshy, convex, then expanded, umbonate, smooth, even; stem sub-fistulose, obsoletely pulverulent; root smooth, springing from a sclerotoid tuber, somewhat yellowish; gills adnate, crowded, slender, white.—*Fr. Epicr. p.* 90. *Gard. Chron.* 1860, *p.* 456, *fig. Bull. t.* 256. *Fl. Dan.* 1613. *Batsch. f.* 93. *Grev. t.* 23. *Eng. Fl. v. p.* 51. *Berk. Mag. Zool. & Bot. no.* 44.

On dead *Russulæ*, &c., and on the ground. Aug.—Nov.

Small; pileus 2-9 lines broad, sub-carnose, at first convex, then expanded, and sub-umbonate, sometimes depressed, white, shining, with a satiny lustre; gills numerous, close, acutely adnate; stem 1 in. long, very slender, white, or subrufescent, under the lens pulverulent, falsely fistulose; the stems have a tendency to become engrafted on each other; either attached to or without a *Sclerotium*.—*Eng. Fl.* Abundant in the tubes of a dead *Polyporus squamosus*, Epping Forest, 1869. Specimen in the British Museum.—*W. G. S.* Spores '0001 × '00007 in.

151. Agaricus (Collybia) racemosus. P. "Branched Collybia."

Pileus sub-membranaceous, convex, grey, somewhat tomentose, (sprinkled with racemose abortive pilei), stem stuffed, base sclerotoid, black; gills adnate, crowded, white.—*Fr. Epicr. p.* 90. *Sow. t.* 287. *Pers. disp. t.* 3, *f.* 8. (*Nees. f.* 190.) *Mag. Zool. & Bot. no.* 45.

On the ground, or on putrid Agarics. Very rare.

Turns almost black in drying.

Sect. 3. Lævipedes—stem naked, smooth.

152. Agaricus (Collybia) acervatus. Fr. "Tufted Collybia."

Cæspitose; pileus somewhat fleshy, convex, then plane, at length umbonate, smooth, hygrophanous; margin slightly striate; stem fistulose, equal, naked, rufous; base rooting, tomentose; gills free, narrow, much crowded, at first whitish.—*Fr. Epicr. p.* 92.

At the base of old fir stems.

Pileus when moist reddish, when dry whitish, 2-3 in. broad; stem 2-4 in. long, 1-2 lines thick, quite smooth, except at the base.

153. Agaricus (Collybia) collinus. Scop. "Hill Collybia."

Pileus rather fleshy, campanulate, then expanded, umbonate, smooth; stem fistulose, equal, abrupt, naked, even, growing pale;

gills free, ventricose, lax, white, becoming pallid.—*Scop. Carn. p. 432. Fr. Epicr. p. 90. Schæff. t. 220. Fl. Dan. t. 1609. Bull. t. 403, f. 1. Seem. Journ. Bot. iv. p. 347.*

On grassy slopes.

Pileus rather viscid, somewhat striate, shining when dry, 1-2 in. broad, smooth, tawny or tan colour, becoming pale; stem 3-4 in. long, 2-3 lines thick, hollow and rather fragile; gills free and rather distant, quaternate.

154. Agaricus (Collybia) xanthopus. *Fr.* "Yellow-stemmed Collybia."

Pileus rather fleshy, convex, then expanded, sub-umbonate, even, smooth; stem fistulose, equal, yellow, even; base equal, rooting, strigose; gills truncate behind, free, broad, thin, lax, crowded, whitish.—*Fr. Epicr. p. 91. Batsch. f. 209, var. Eng. Fl. v. p. 46.*

About the stumps of trees, &c. July.

Pileus 1-2 in. broad, tough, sub-convex, becoming pale; stem 3 in. high, rigid, strigose at the base.—*Fries.*

155. Agaricus (Collybia) dryophilus. *Bull.* "Wood Collybia."

Pileus somewhat fleshy, nearly plane, obtuse, rather depressed, even, smooth, turning pale; stem fistulose, smooth, reddish brown, or yellowish; gills sinuate, adnexed (at length with a decurrent tooth), nearly free, crowded, narrow, white or pallid.—*Fr. Epicr. p. 92. Bull. t. 434. Sow. t. 127. Schæff. t. 255. Price, f. 12. Huss. i. t. 39. Eng. Fl. v. p. 47. Badh. i. t. 8, f. 2, ii. t. 7, f. 5.*

Amongst leaves in woods. Very common. [United States.]

Pileus 1-2 in., whitish, pinkish, yellowish, or livid, plane, sometimes depressed, fleshy, thin, tender, easily injured, of a watery substance; gills free, white, or very pale flesh colour, soft, tender, entire, or serrate, numerous; stem 2-3 in. high, $\frac{1}{4}$ - $\frac{1}{2}$ in. thick, shining, splitting, sometimes twisted, of the same colour as the pileus, summit generally darker and pinkish; the whole plant fragile, and the pileus easily detached from the stem.—*Grev.* Spores pip-shaped as in *Marasmius peronatus*, *Fr.*; length '00025 in.—*W. G. S.*

156. Agaricus (Collybia) exsculptus. *Fr.* "Sulphur-gill Collybia."

Pileus somewhat fleshy, tough, convex, then expanded, umbilicate, unchangeable; stem fistulose, slender, incurved, short, smooth; gills almost free (with a decurrent tooth), arcuate, much crowded, narrow, sulphur coloured.—*Fr. Epicr. p. 93. B. & Br. Ann. N.H. 1866, no. 1109.*

On decayed oak and on turf.

Pileus 1-2 in. ; allied to *A. dryophilus*, but tougher ; the gills are sulphur coloured and transversely striate.

157. *Agaricus (Collybia) tenacellus.* P. "Delicate Collybia."

Pileus rather fleshy, nearly plane, sub-umbonate, smooth, even ; stem scantily fistulose, tough, naked, tawny ; root strigose ; gills emarginate, adnexed, broad, loose, sub-distant, snowy white.—*Fr. Epicr. p.* 92. *Sow. t.* 206. *Pers. Ic. pict. t. f.* 3-4. *Eng. Fl. v. p.* 50. *A. griseus*, *Schæff. t.* 236.

On fir cones.

[S. Carolina.]

Pileus 1 in. across, tinged with brown, when young conic, then convex and sub-hemispherical, at length expanded and nearly plane, sometimes slightly umbilicate, not striate, sub-carnose, smooth, dry, cinereous, inclining to yellowish, often altogether abortive ; gills free, or often adnexed, ventricose, rather distant, shorter ones truncate behind, in general pure white, sometimes with a tinge of grey, under a powerful lens covered with variously hooked or conic papillæ ; stem 2-4 in. long, scarcely 1 line thick, flexuous, filiform, attenuated very much towards the base, and somewhat strigose, hollow, pale above, below tawny, very minutely pubescent under a good lens, when young beautifully downy, and then not distinctly hollow, but with only a pale line down the centre. Taste pleasant.—*M. J. B.* Spores $\cdot 0002 \times \cdot 00013$ in.

158. *Agaricus (Collybia) esculentus.* Jacq. "Nail Mushroom."

Pileus somewhat fleshy, nearly plane, obtuse, smooth ; stem fistulose, equal, tough, straight, rooting, very smooth, clay coloured ; gills adnate, lax, whitish.—*Fr. Epicr. p.* 92. *Jacq. Coll. ii. t.* 14, *f.* 4. *Tratt. Esb. t. F. Lenz. f.* 18. *Bull. t.* 422, *f.* 2. *Vaill. t.* 11, *f.* 16-18. *Cooke B. F. t.* 6, *f. i.* *Eng. Fl. v. p.* 50.

In pastures. Spring. Esculent.

[United States.]

Pileus about 1 in. across, sometimes striate, and occasionally fuscous ; gills broad, rather close ; stem 2 in. high, 1 line thick, obsoletely fistulose ; root generally smooth, sometimes 6 in. long, and downy when growing amongst leaves, either perpendicular or flexuous. Taste bitter, unpleasant.—*Eng. Fl.*

159. *Agaricus (Collybia) clavus.* Bull. "Bolton's Collybia."

Pileus rather fleshy, almost plane, obtuse, even ; stem stuffed, thin, smooth, straight, white ; gills free, crowded, white, separating slightly at the base.—*Fr. Epicr. p.* 94. *Bull. t.* 148, *A. C., t.* 569 *F. Bolt. t.* 39, *B. Vaill. t.* 11, *f.* 19-20.

On twigs, leaves, &c.

"This is a minute species, differing from *A. acicula* in its white stem and gills, but agreeing somewhat in the orange-red pileus. It is introduced on the faith of Bolton's figure and description, t. 39, B, which however, may possibly be *A. acicula*. The 'English Flora' plant is *A. acicula*."—*M. J. B.*

160. Agaricus (Collybia) ocellatus. *Fr.* "Ocellate Collybia."

Pileus somewhat fleshy, nearly plane, even, disc depressed, darker, umbonate; stem minutely fistulose, filiform, smooth, brownish white; base rooting, fibrillose; gills adnexed, then separating, crowded, white.—*Fr. Epicr. p. 94. Bull. t. 569, f. 1, H.P. Eng. Fl. v. p. 51.*

On the ground, amongst leaves.

Pileus even, smooth, sometimes repand; disc yellow, brown, or rufous; gills close, narrow; stem obsoletely fistulose, 1-3 in. long, sub-filiform, paler above.—*Fries.*

Sect. 4. Tephrophane—dingy, hygrophanous.

161. Agaricus (Collybia) inolens. *Weinm.* "Scentless Collybia."

Inodorous. Pileus rather fleshy, campanulato-convex, then expanded, rigid, umbonate, smooth, hygrophanous, opaque; margin finely striate, stem stuffed, then hollow, rigid, undulated, whitish-strigose at the base, whitish-squamulose at the apex, gills adnexed, seceding, crowded, whitish, then grey.—*Weinm, no. 183. Fr. Epicr. p. 96.*

In pine woods. Street.—*J. A. C.*

Livid, stem 2-3 in. long, 1-1½ lin. thick, but compressed, 3 lin. broad. Pileus 1-2 in. broad, repand, unequal, livid, when dry rather silky, pale tan colour.

162. Agaricus (Collybia) plexipes. *Fr.* "Twisted Collybia."

Inodorous. Pileus submembranaceous, campanulate, subrugose, somewhat striate, smooth; stem fistulose, equal, tough, sericeo-fibrous, with entangled fibres, base abruptly rooting; gills free, rather crowded, white, becoming glaucous.—*Fr. Epicr. p. 96. S. M. i. p. 146. Fl. Dan. t. 2023, f. 2.*

On trunks.

Pileus at first blackish, dirty white at the margin, then livid-fuliginous. Firm stem, scarcely rooting, about 3 in. long, 1-2 lines thick, dingy, fibrous, obsoletely striate. Pileus campanulate, 1-2 in. broad.—*Fries.* Spores .00016 × .00033 in.—*W. G. S.*

163. Agaricus (Collybia) laceratus. *Lasch.* "Torn Collybia."

Pileus between fleshy and membranaceous, campanulate, rather blunt, moist, streaked with brown; stem stuffed, then hollow, firm, twisted, fibroso-striate, floccoso-pruinose above, at length compressed; gills adnexed, distant, broad, thick, greyish white.—*Fr. Epicr. p. 96. Berk. Out. p. 120.*

In pine woods.

Pileus $1\frac{1}{2}$ in. across, dingy, pallid when dry.

164. Agaricus (Collybia) protractus. *Fr.* "Protracted Collybia."

Pileus submembranaceous, convexo-plane, shining, disc fleshy, depressed, sub-papillate, darker; margin striate; stem obsoletely fistulose, even, smooth, grey; root long, fibrilloso-strigose; gills fixed, ventricose, very broad, grey, finely dusted with the white spores.—*Fr. Ep. p. 97. B. & Br. Ann. N.H. (1866), no. 1110.*

On the ground. Nov. Ascot.

Stem 3 in. and more, pileus grey-brown, scarcely an inch broad, gills obliquely ovate, 3 lines broad and more.—*E. F.*

165. Agaricus (Collybia) atratus. *Fr.* "Charcoal Collybia."

Pileus somewhat fleshy, plane, then depressed, umbilicate, smooth, shining, margin convex; stem stuffed, tough, even, smooth, short, brown without and within; gills adnate, rather broad, whitish-grey.—*Fr. Epicr. p. 98. Ann. N.H. no. 671.*

On burnt soil in woods.

Pileus 1 in. across, dark brown at first; stem 1 in. high, 1-2 lines thick. Spores 00023×00016 in.—*W. G. S.*

Sub.-Gen. 8. MYCENA. *Fr. S. M. i. p. 140.*

Pileus more or less membranaceous, generally striate, with the margin always straight, and at first pressed to the stem, never involute, expanded, campanulate, and generally umbonate (not depressed, as in *Omphalia*); stem externally cartilaginous, tubular, not stuffed when young, confluent with the hymenophore, but heterogeneous from it; gills never decurrent, though some species have a broad sinus near the stem.—(*Pl. II., fig. 8.*)

HAB. Mostly epiphytal.

Most of the species are small, beautiful, and inodorous, but some which have a strong alkaline odour are probably poisonous; none are known to be edible. They appear after rain in summer and autumn.

Sect. 1. Calodontes—margin of gills darkest.

- 166. Agaricus (*Mycena*) pelianthinus.** *Fr.* "Purplish *Mycena*."

Pileus somewhat fleshy, convex, then expanded, obtuse, moist, hygrophanous; margin striate; stem firm, fibrilloso-striate above, equal, pallid; gills adnexed, emarginate, beautifully connected by veins, purplish, with a darker, toothed edge.—*Fr. Epicr. p. 99. Batt. t. 19, f. F. Bolt. t. 4, f. 1. Fl. Dan. t. 1911, f. 1. Berk. Outl. t. 6, f. 1. Eng. Fl. v. p. 43. Mag. Zool. & Bot. no. 2.*

Amongst dead leaves in woods.

Pileus 1-2 in. broad, when moist transparent, when dry whitish, tinged with purple, the disc fleshy, even, rather obtuse, flesh white; gills elegantly connected by a net-work of veins, distant, purple, when dry fuscous-umber; veil none; stem 2-3 in. high, $1\frac{1}{2}$ -2 lines thick, smooth, becoming pallid; spores white.—*Fries.* The gills are sprinkled over with short purple hairs, arranged in fascicles on the edge. Smell strong.—*M. J. B.*

- 167. Agaricus (*Mycena*) balaninus.** *P.* "Beech-mast *Mycena*."

Pileus somewhat fleshy, convex, then plane, smooth when dry, striate when moist; stem striate, rooting, villous below, squamulose above; gills adnate, then seceding, connected by veins, somewhat reddish, with a purple edge.—*Fr. Epicr. p. 99. Berk. Mag. Zool. & Bot. i. t. 15, f. 2.*

Amongst leaves, beech-mast, &c. Rare.

Pileus $1\frac{1}{2}$ in. broad, convex, sub-campanulate, obtusely umbonate, at length more or less expanded, ochraceous, with a slight tinge of umber, very minutely mealy, slightly rugulose, carnosio-membranaceous, margin scarcely striate; gills broad, rounded, quite free, with the exception of a connecting tooth, rather distant, pale, sprinkled, and fringed with dull purple spiculæ, interstices veiny. Spores white, elliptic; stem $2\frac{1}{2}$ in. high, 1-2 lines thick, attenuated downwards, flexuous, rigid, white, and mealy within the pileus, deep sienna brown below, dark brown at the base, which is embedded more or less in a spongy mass, by which it adheres to the "mast," shining, quite smooth, fistulose.—*M. J. B.*

- 168. Agaricus (*Mycena*) marginellus.** *Fr.* "Margined *Mycena*."

Pileus fleshy, campanulate, umbo darker, smooth, finely striate; stem smooth, gills slightly adnexed, distant, white, the edges darkened with minute particles.—*Epicr. p. 100. B. & Br. Ann. N.H. 1865, no. 988.*

On fir trunks, amongst *Hypnum*. Aug. Aboyne.

"Pileus 3 lines across, conical, striate, pallid grey, darker in the centre, minutely rivulose; margin sub-crenulate; stem short, slightly curved, shining, quite smooth, minutely fistulose; gills distant, slightly adnexed, white, with a purple margin. Under a high magnifying power the pileus (especially the edge) and stem appear clothed with minute glandular particles, similar to those which colour the edge of the gills."—*B. & Br.*

169. *Agaricus (Mycena) elegans.* P. "Elegant *Mycena*."

Pileus submembranaceous, campanulate, striate, almost umbonate; stem even, equal, rigid, floccoso-fibrillose at the base; gills narrow, adnate, livid or whitish, edge yellow, entire.—*Fr. Epicr. p. 100, Fl. Dan. t. 2024, f. 2. Eng. Fl. v. p. 59.*

In woods.

[S. Carolina.]

Pileus $\frac{1}{2}$ in. or more across, greyish, or livid yellow, obtuse, striate, margin paler, gills rather broad, adnate, with a minute tooth, scarcely ventricose, the part nearest the pileus livid; margin beautiful yellow; stem 1-2 in. high, rather brittle, slender, minutely pilose, yellow above, brown below, fistulose, the base strigose, rather swollen, filled with watery juice.—*M. J. B.*

170. *Agaricus (Mycena) rubromarginatus.* Fr. "Red-bordered *Mycena*."

Pileus somewhat membranaceous, campanulate, obtuse, striate, hygrophanous; stem rigid, even, without juice; gills adnate, distant, whitish, edged with purple or purple-brown.—*Fr. Epicr. p. 101. Berk. Out. p. 122.*

On pine stumps. Nov.

Stem 1-2 in. long, scarcely exceeding 1 line thick, equal, livid, pallid. Pileus membranaceous, obtuse, about an inch across, hygrophanous, livid reddish or purplish-brown, becoming pale. Somewhat resembling *A. sanguinolentus* but distinguished at once by the absence of red juice in the stem.—*M. J. B.*

171. *Agaricus (Mycena) strobilinus.* Pers. "Fir-cone *Mycena*."

Scarlet. Pileus rather fleshy, campanulate, with an acute umbo, even; margin striate; stem rigid, without juice, even, clothed with white strigose hairs at the base; gills adnate, edge of a dark blood-red colour.—*Fr. Epicr. p. 101. Fl. Dan. t. 2025, f. 1. Ag. coccineus, Sow. t. 197. Eng. Fl. v. p. 59. A. coccinellus, Fr. Mon. Hym. ii. p. 200.*

On fir cones. Rare.

Subgregarious, subfasciculate. Pileus 3-5 lines broad, campanulate, with a rather short, fleshy umbo, smooth, bright red, or red-orange, striate at the margin; gills adnate, with a decurrent process, distant, whitish-red, edges dull and darker red; stem 1-2 in. high, hollow, firm, smooth, pale red, strigose at the base and whitish, often with a long root.—*Grev.*

172. Agaricus (Mycena) rosellus. *Fr.* "Rosy Mycena."

Rose-coloured. Pileus membranaceous, hemispherical, obtuse, umbonate, striate; stem thin, soft, without juice, whitish fibrillose at the base; gills adnate, with the edge darker.—*Fr. Epicr. p. 101. Fl. Dan. t. 2025. f. 2. Pers. Syn. t. 5, f. 3.*

Amongst fir leaves. Rare.

Smaller, thinner, softer, and paler, than *A. strobilinus*, which it otherwise somewhat resembles, although perfectly distinct.

Sect. 2. Adonideæ—stem not dilated at base, gills of one colour.

173. Agaricus (Mycena) purus. *P.* "Amethyst Mycena."

Strong scented. Pileus rather fleshy, campanulate, then expanded, obtuse, umbonate, smooth, turning pallid; margin striate; stem rigid, even, nearly naked, villous at the base; gills very broad, widely sinuate, adnexed, connected by veins, paler than the pileus.—*Fr. Epicr. p. 102. Huss. ii. t. 49. Eng. Fl. v. p. 60. Paul. t. 119. Fl. Dan. t. 1612, 1673, f. 1. Batsch. f. 20. Larbr. t. 13, f. 4. Bull. t. 507. Schæff. t. 303.*

Amongst leaves in woods. Common. [S. Carolina.]

Gregarious. Pileus $\frac{1}{2}$ -2 in. broad, sub-carnose, obtuse, convex, at length depressed, the margin thin, pellucid, sometimes marked with two or three concentric grooves, amethyst, or rose-coloured, soon changing to a pale brown purple, at last nearly white; gills broad, adnate, sometimes almost decurrent, at first whitish, then amethyst or rose, then subrufescent, connected by veins, margin uneven; stem often twisted, more or less fibrillose, at length smooth, tough, hollow, lined with silky fibres, splitting easily upwards, the base often strigose. Always distinguishable by its taste, and odour like that of radishes.—*M. J. B.* Spores $\cdot 00023 \times \cdot 00013$ in.

174. Agaricus (Mycena) iris. *Berk.* "Blue Mycena."

Pileus hemispherical, obtuse, striate, sub-viscid, adorned with blue fibrillæ; stem fasciculate, pilose; gills almost free.—*Berk. Outl. t. 6. f. 3. Eng. Fl. v. p. 56.*

On fir stumps. Oct. Rare.

Fasciculate or scattered, brittle, when young the pileus and stem are bright sky-blue, and beautifully tomentose. Pileus $\frac{3}{8}$ - $\frac{5}{8}$ in. broad, membranaceous, hemispherical, obtuse, striate, umber, clothed with blue fibrillæ, which are glued down to the epidermis, scattered in the centre, thicker and more free on the margin, which is slightly denticulate; gills free or slightly adnexed, linear, pale cinereous, the margin sometimes denticulate; stem, $1\frac{1}{2}$ - $3\frac{1}{2}$ in. high, not 1 line broad, not rooting, blue below, above subrufescent, the tomentum below depressed and blue, above nearly white, minutely but distinctly fasciculato-pilose, in very elongated specimens obsolete.—*M. J. B.*

175. Agaricus (Mycena) Adonis. Bull. "Delicate Mycena."

Pileus membranaceous, conico-campanulate, smooth, nearly even; stem slender, even, smooth; gills adnexed, uncinat, narrow, white, or tinged with rose colour.—*Fr. Epicr. p. 102. Bull. t. 560, f. 2. Eng. Fl. v. p. 60.*

In woods. Rare.

[S. Carolina.]

Pileus 3-4 lines high and broad, campanulate, rose-coloured, white, yellowish, or green; gills not decurrent; stem 2 in. or more high.—*Fries.*

176. Agaricus (Mycena) luteo-albus. Bolt. "Bolton's Mycena."

Pileus membranaceous, campanulate, umbonate, slightly striate; stem filiform, dry, shining, smooth, yellowish; gills adnate, subuncinate, broad, white.—*Fr. Epicr. p. 103. Bolt. t. 38, f. 2. Eng. Fl. v. p. 60.*

Amongst moss in woods. Rare.

Pileus 3-4 lines high and broad, dry; gills sub-ventricose; stem 1-2 in. high, filiform, sub-flexuous.—*Fries.*

177. Agaricus (Mycena) flavo-albus. Fr. "Yellow-white Mycena."

Pileus somewhat membranaceous, campanulate, or convex, smooth, almost even, then expanded and umbonate; stem slightly rigid, straight, white, pellucid, pruinose above; gills free, separating, at length plane, ventricose, white.—*Fr. Epicr. p. 103. B. & Br. Ann. N.H. 1865, no. 989. A. pumilus. Bull. t. 260. A. lacteus, Berk. Eng. Fl. v. p. 60.*

On moss at the base of trunks of trees. Formerly mixed up by Fries with *A. lacteus*.

Pileus variable, yellowish, or entirely white; sometimes difficult to distinguish from *A. lacteus*, 3-6 lin. broad, conico-campanulate, at length expanded, minutely umbonate, when dry pure white; flesh thin, margin transparent, more or less striate and crenulate; gills white, slightly ventricose, adnate or adnexed, connected by veins; stem 1-2 in. high, $\frac{1}{2}$ line thick, sometimes rooting, pulverulent above, pulverulento-fibrillose below, with a little down at the base, not brittle.—*M. J. B.*

178. Agaricus (Mycena) lacteus. P. "Milk-white Mycena."

Pileus membranaceous, campanulate, sub-umbonate, when moist striate, even when dry; stem equal, filiform, rather tough, flexile, smooth; gills adnate, ascending, narrow, milk-white.—*Fr. Epicr. p. 103. Fl. Dan. t. 1845, f. 1. Bull. t. 563, f. N. O. Buxb. iv., t. 31, f. 3.*

In fir woods, on leaves, or naked soil. [S. Carolina.]

Stem 1 in. and more long, villous at the base. Pileus thin, papillate, even when dry, 3-5 lin. broad; gills scarcely $\frac{1}{2}$ lin. broad. Spores $\cdot 0002 \times \cdot 00013$ in.

Sect. 3. Rigidipedes—stem firm, rigid.

179. Agaricus (Mycena) proliferus. *Sow.* "Proliferous Mycena."

Pileus somewhat fleshy, campanulate, then expanded, dry, with a broad darker umbo; margin at length sulcate; stem firm, rigid, smooth, shining, minutely striate, rooting; gills adnexed, sub-distinct, white, then pallid.—*Fr. Epicr. p. 105. Sow. t. 169.*

On soil in gardens. Inodorous.

Densely caespitose; stem frequently proliferous. Stem pallid above, but below tawny or bay; pileus pallid, disc darker and obtusely umbonate; margin somewhat striate, and at length cracked.

180. Agaricus (Mycena) rugosus. *Fr.* "Rugose Mycena."

Pileus somewhat fleshy, campanulate, then expanded, with unequal elevated wrinkles, cinereous; stem firm, tough, smooth, pallid, strigose below; gills arcuato-adnate, uncinatate, connected by veins, sub-distant, whitish grey.—*Fr. Ep. p. 106. B. & Br. Ann. N.H. 1865, no. 990. Bull. t. 518. f. K.M.*

On a prostrate oak. Sep. Bodelyddan.

"Pileus at first campanulate, then convex, sulcate up to the umbo, cinereous, as well as the short compressed stem, which is glabrous above; gills distant, cinereous, uncinato-adnate, connected by veins."—*B. & Br.*

181. Agaricus (Mycena) galericulatus. *Scop.* "Little-cap Mycena."

Pileus submembranaceous, conico-campanulate, then expanded, striate to the umbo, dry, smooth; stem rigid, polished, even, smooth, base rooting, fusiform; gills adnate, with a decurrent tooth, connected by veins, whitish, or flesh-coloured.—*Fr. Epicr. p. 106. Bull. t. 518. f. C.D.E. Hoffm. t. 4, f. 1. Paul. t. 122, f. 7. Eng. Fl. v. p. 58. Price f. 55.*

On trunks of trees. Very common. [United States.]

Often densely caespitose, sometimes scattered. Pileus 3-9 lines broad, sometimes larger, campanulate or conical, often subumbonate, at length depressed, innato-fibrillose, striate, brownish-white, with sometimes tints of blue or yellow; gills rather distant, not so broadly adnate as in *A. alcatinus*, sometimes nearly free, often pinkish; stem variable in length, rigid, smooth, except at the base, which is densely strigose. Inodorous, insipid.—*M. J. B.*

182. *Agaricus (Mycena) polygrammus.* Bull. "Sulcate-stem *Mycena*."

Pileus submembranaceous, conico-campanulate, sub-umbonate, dry, striate; stem rigid, tough, sulcato-striate throughout its length; rooting, strigose at the base, shining; gills attenuated behind (free or uncinat), whitish or flesh-coloured.—*Fr. Epicr.* p. 107. *Bull. t.* 395. *Sow. t.* 222. *Fl. Dan. t.* 1615, f. 1, t. 1498. *Batsch. f.* 85 (*young*). *Linnaea. v. t.* 7, f. 1. *Eng. Fl. v. p.* 58.

On trunks of trees. Common.

[S. Carolina.]

Pileus 1-1½ in. broad, at first cinereous, umber towards the margin, glandiform, pruinose, then livid brown, conico-campanulate, submembranaceous, rugose, with innate fibres, margin striate; gills rather distant, at first dirty white, then pinkish, ventricose, though sometimes almost linear, all but free, margin subserrulate; stem 3 in. high, 1 line or more thick, regularly and deeply striate, the interstices fibrillose, but occasionally the striæ are obsolete, silvery, rooting, fistulose, nearly the colour of the pileus, but paler, twisted, brittle; inodorous, insipid.—*M. J. B.* Spores '00035 × '00026 in. (*Pl. II., fig. 8, reduced.*)

183. *Agaricus (Mycena) parabolicus.* A. & S. "Fir-trunk *Mycena*."

Pileus submembranaceous, at first oval, then parabolic, obtuse, discoid, becoming pale, striate half way; margin entire, turning white; stem rigid, even, smooth, colour of the pileus, base strigose, swollen, abruptly rooting; gills simple, adnate, ascending, nearly distinct, whitish.—*Fr. Epicr. p.* 107. *Sow. t.* 165.

On trunks, especially of fir.

Stem 2-3 in. long, 1 lin. thick, incrassated at the base, below becoming pale, above dull violet, mealy when young. Pileus obtuse, moist, disc blackish, verging on violet, otherwise becoming pale and whitish.

Sect. 4. Fragilipedes—stem fragile.

184. *Agaricus (Mycena) atro-albus.* Bull. "Bi-coloured *Mycena*."

Rather firm; pileus somewhat fleshy, obtuse, campanulate, even, smooth, opaque, brown; whitish and striate about the margin; stem straight, shining, two-coloured; root swollen, bulbous, hairy; gills attenuated, almost free, ventricose, white.—*Fr. Epicr. p.* 108. *Bolt. t.* 137. *Eng. Fl. v. p.* 56.

Amongst moss, at the roots of trees.

Solitary, or gregarious, rather firm; pileus obtuse; stem 2-3 in. long, sometimes pruinose at the apex.—*Fries.*

185. *Agaricus (Mycena) dissiliens.* Fr. "Splitting *Mycena*."

Very fragile; pileus submembranaceous, conico-campanulate, obtuse, lineato-plicate to the middle; stem attenuated, somewhat incurved, minutely striate, cinereous, dark; base strigose; gills rounded, seceding, at length free, broad, soft, whitish, grey at the base.—*Fr. Epicr. p.* 108. *Bolt. t.* 154. *Mich. t.* 79, *f.* 5. *Paul. t.* 122, *f.* 8?

On trunks of trees. Strong scented.

Stem 2 in. long, strigose at the base, very fragile, 1-2 lin. thick, cinereous, compressed, splitting in revolute flaps. Pileus cinereous-brown, whitish at the margin, sulcate to the middle, dry.

186. *Agaricus (Mycena) alcalinus.* Fr. "Stump *Mycena*."

Rigid, but brittle, strong scented; pileus rather membranaceous, campanulate, obtuse, naked, deeply striate, moist, shining when dry; stem smooth, slightly sticky, shining, villous at the base; gills adnate, rather distant, white, then glaucescent.—*Fr. Epicr. p.* 109. *Schæff. t.* 31-32. *Eng. Fl. v. p.* 57. *Gard. Chron.* (1861), *p.* 1114.

On trunks of trees. Common.

[S. Carolina.]

Solitary or cæspitose; pileus $\frac{1}{2}$ -2 in. broad, subcarnose, umbonate, sub-umbonate, or quite obtuse, even, with or without imbedded fibrillæ, at first conico-papillate, rugose, cinereous, or tinged with olive, sub-striate, when old expanded or depressed, but little changed in colour, though occasionally with a pink or yellow hue; gills adnate, with a tooth, distant when old, slightly ventricose, at first pale, then glaucous, pinkish, or yellowish, more or less connected by veins. Stem 3 in. high, 1-2 lines thick, fistulose, sub-fibrilloso-striate, attenuated upwards, downy at the base, the down sometimes tawny, sometimes firm and tenacious, sometimes very brittle, grey above, yellowish or reddish beneath when young, but when old sometimes changing above to a bright yellow; odour pungent, like fermented or putrid walnuts.—*M. J. B.* Spores $\cdot 0003 \times \cdot 0002$ in.

187. *Agaricus (Mycena) pauperculus.* Berk. "Little-stump *Mycena*."

Strong scented; pileus obtusely conical or hemispherical, minutely innato-fibrillose, submembranaceous; stem smooth, rooting, villous at the base; gills at first free, then adnexed, white.—*Berk. Outl. p.* 125. *Eng. Fl. v. p.* 57.

Inside decayed stumps.

Minute, ochraceous-white. Pileus 1 line broad, fleshy, rather firm, scarcely membranaceous, obtusely conic or hemispherical, most minutely but decidedly innato-fibrillose, pale ochraceous-white, in age almost tawny, probably stained by the wood on which it grows. When moist the gills shine through, giving a striate appearance, but not always. Gills white, adnexed

by reason of the growth of the pileus, when young free. Stem $\frac{1}{2}$ -1 in. high, $\frac{1}{2}$ line thick, white, curved, rooting, the root villous, minutely stuffed, smooth, even under a high magnifying power, powdered at the top with the spores, generally thicker below; spores white, round; odour farinaceous.—*M. J. B.*

188. Agaricus (Mycena) vitreus. Fr. "Glassy *Mycena*."

Very fragile; pileus membranaceous, campanulate, everywhere lineato-striate, except the umbo or somewhat fleshy disc; stem slender, minutely striate, shining, base fibrillose; gills adnate, distinct, linear, whitish.—*Fr. Epicr. p. 111. B. & Br. Ann. N.H. (1866), no. 1111.*

In woods. Oct. Bryn Tyrch, Caernarvon.

Pileus livid brown, margin naked. Stem 2-4 in. long, $\frac{1}{2}$ lin. thick, minutely striate, base fibrillose, insinuating itself amongst moss, falsely rooting (pseudo-radicata).

189. Agaricus (Mycena) tenuis. Bolt. "Slender *Mycena*."

Very brittle; pileus membranaceous, campanulate, then convex, obtuse, lineato-striate, margin crenate, appendiculate; stem membranaceous, pellucid, straight; gills adnate, distant, distinct, thin, watery, whitish.—*Fr. Epicr. p. 111. Bolt. t. 37. Price f. 9.*

In shady moist woods. Rare.

Delicate, very fragile and watery. Stem 3 in. or more long, scarcely 1 lin. thick; hyaline white, or yellowish, at the base. Pileus about $\frac{1}{2}$ in. broad, hyaline, or tawny white. Spores 00015×0001 in.—*W. G. S.*

190. Agaricus (Mycena) tenellus. Schum. "Delicate *Mycena*."

Cæspitose. Pileus membranaceous, campanulate, then convex, obtuse, pellucid; margin striate; stem slender, soft, smooth; base villous; gills uncinata, very thin, crowded, white or flesh-coloured.—*Fr. Epicr. p. 111. Ray. Syn. t. 1, f. 2.*

On decayed trees.

Pileus $\frac{1}{2}$ in. broad, entirely white, or tinged with rose-colour. Has not been found since the time of Ray, and it is very rare on the Continent.—*M. J. B.*

Sect. 3. Filopedes—stem filiform, flaccid.

191. Agaricus (Mycena) filopes. Bull. "Thready-stem *Mycena*."

Pileus membranaceous, obtuse, campanulate, then expanded, striate; stem filiform, flaccid, rather brittle, smooth; base pilose, rooting; gills free, lanceolate, crowded, white.—*Fr. Epicr. p. 112. Bull. t. 320. Hoffm. t. 6, f. 1. Batsch. f. 2. Eng. Fl. v. p. 56.*

In woods, amongst leaves.

[United States.]

Pileus livid, brown, or umber, tinged with pink, $\frac{1}{2}$ in. broad, convex, or conico-campanulate, striate; gills free, or minutely adnexed, slightly ventricose, white, or a dilute shade of the pileus; stem 2-3 in long, fistulose, juicy, smooth, except the rooting base, which is pilose, livid, dirty white, or brownish.—*M. J. B.*

192. Agaricus (Mycena) vitilis. *Fr.* "Flexile Mycena."

Pileus membranaceous, conical, then expanded, papillate, moist, deeply striate, becoming pale; stem filiform, straight, flexile, smooth, without juice, shining, rooting; gills attenuato-adnate, rather distant, greyish-white.—*Fr. Epicr. p. 113. Sow. t. 385, f. 5. Bull. t. 518, f. O.*

Amongst leaves.

Stem thin, hollow, 3-6 in. long, filiform, rooting; pileus papillate, 3-4 lin. broad, striate to the middle, dry, livid, or brown, becoming pale or whitish; gills linear, whitish, or grey, edge growing paler.

193. Agaricus (Mycena) speireus. *Fr.* "Opaque Mycena."

Pileus membranaceous, conico-convex, then plane, unpolished, striate; disc darker, at length depressed; stem filiform, tough, shining, fibrillose, rooting; gills plane, then decurrent, distant, white.—*Fr. Epicr. p. 113. Berk. Out. p. 126.*

On mossy trunks.

Stem 2 in. long, $\frac{1}{2}$ lin. thick; pileus 2-3 lines broad, opaque, greyish brown, sometimes fibrillose or pruinose.

194. Agaricus (Mycena) acicula. *Schæff.* "Orange Mycena."

Pileus membranaceous, campanulate or convex, smooth, orange-red; margin striate, stem rooting, setaceous, tough, shining; gills rounded-adnexed, ventricose, distant, yellow, becoming whitish at the edge.—*Fr. Epicr. p. 114. Schæff. t. 222. Eng. Fl. v. p. 52.*

On leaves, twigs, &c., in woods.

Pileus $\frac{1}{2}$ -4 lines broad, campanulate, generally umbonate, margin striate, under a powerful lens, most minutely pilose, bright orange, the umbo darkest, sub-carnose, within deep orange; gills few, somewhat ventricose, adnexed or adnate, with shorter ones between them, white, tinged with yellow; stem about 1 in. long, quite filiform, flexuous, nearly equal, minutely pilose, like the pileus, pale yellow, with a line within.—*Eng. Fl.*

Sect. 4. *Lactipedes*—gills and stem milky.

195. **Agaricus (Mycena) hæmatopus.** *Pers.* "Bleeding Mycena."

Cæspitose; pileus fleshy, campanulate, obtuse, smooth, margin denticulate; stem rigid, pulverulent, yielding a dark-red juice; gills adnate, white.—*Pers. Obs.* ii. p. 56. *B. & Br. Ann. N.H.* 1865, no. 991.

On old dead trunks. Sept. Bodelwyddan. [United States.]

"Tufted; pileus moist, campanulate, then expanded, reddish, with a tinge of purple, $\frac{1}{2}$ -1 in. or more across, striate, very minutely rivulose; stem pale rufous, flesh-coloured, at first thickened at the base, then nearly equal, farinaceous; gills distant, adnato-sub-decurrent, white, edge red; interstices even; everywhere distilling when broken a dark-red juice. Far larger than any form of *A. sanguineolentus* or *A. cruentus*."—*B. & Br.*

196. **Agaricus (Mycena) cruentus.** *Fr.* "Red-juiced Mycena."

Pileus submembranaceous, conico-campanulate, striate, margin entire; stem rigid, glabrous, villous at the base, distilling a red juice; gills adnate, whitish.—*Fr. Sys. Myc.* i. p. 149. *B. & Br. Ann. N.H.* 1865, no. 992.

On fir cones. Bodelwyddan, Flintshire.

"Pileus conic, obtuse, striate, margin inflexed, entire; substance at first rather thick in proportion; stem rigid, smooth, full of red juice, strigose at the base; gills obtuse in front, shortly adnate, white; margin of the same colour."—*B. & Br.*

197. **Agaricus (Mycena) sanguineolentus.** *A. & S.* "Stinking Mycena."

Pileus membranaceous, campanulate or convex, striate; stem flaccid, smooth, yielding a red juice; gills adfixed, reddish, with a dark purplish edge.—*Fr. Epicr.* p. 115. *Bull. t.* 518, f. *P. (right).* *Eng. Fl.* v. p. 59.

Amongst leaves in woods. Sept. Oct.

Solitary or gregarious; pileus 1-2 lines broad, obtuse, margin striate, brownish purple, resembling that of the crust of port wine; gills paler, adnate, with a tooth, margin purple; stem straight, smooth, sometimes attenuate, upwards of the same colour as the pileus, darker below, fistulose, replete with pellucid juice of the same colour; when growing on fir cones strigose at the base; odour strong.—*M. J. B.* Spores large, irregular, approaching in shape some *Hyporhodia* 00034 × 0002 in.

198. Agaricus (Mycena) crocatus. *Schrad.* "The Stainer."

Pileus sub-membranaceous, campanulate, sub-striate; stem tall, attenuated, with a villous, rooting base, yielding a copious saffron-coloured juice; gills attenuated behind, adnexed, ventricose, white.—*Fr. Epicr. p. 115. Fl. Dan. t. 1550, f. 1, 2024, f. 1. Knapp. Journ. Nat. t. 7. Ann. N.H. no. 672.*

Amongst leaves.

Stem 3-5 in. long, about 1 lin. thick; pileus $\frac{1}{2}$ -1 in. broad, olive, greyish, or whitish, margin quite smooth.

199. Agaricus (Mycena) chelidonium. *Fr.* "Celandine Mycena."

Pileus membranaceous, campanulate, then convex, obtuse, nearly even; stem even, smooth, rooting, compressed, with a yellow juice; gills adnate, whitish, then yellowish.—*Fr. Epicr. p. 115. Sow. t. 385, f. 4.*

On stumps of beech.

Only found by Sowerby. Stem $1\frac{1}{2}$ -2 in. long, about 1 lin. thick, smooth, yellowish, with a sparing yellow juice, rooting; base villous; pileus $\frac{1}{2}$ -1 in. broad, pellucidly striate when moist, even and opaque when dry, yellowish, tinged with flesh colour.

200. Agaricus (Mycena) galopus. *Schrad.* "White milky Mycena."

Pileus membranaceous, campanulate, rather umbonate, striate; stem slender, fibrillose, and rooting base, filled with white milk; gills attenuated, adnexed, white, then glaucous.—*Fr. Epicr. p. 115. Berk. Outl. t. 6, f. 2. Fl. Dan. t. 1550, f. 2. Batt. t. 28. Q. Eng. Fl. v. p. 58.*

Amongst leaves, under trees.

[S. Carolina.]

Pileus $\frac{1}{2}$ -1 in. broad, campanulate, or convex, ochraceous, the centre blackish, pellucid, striate; gills white, arcuato-adnate, or even decurrent; stem 2-3 in. high, about 1 line thick, pale umber, base somewhat rooting, fibrillose-tomentose, or even strigose, fistulose, not brittle; milk mild, taste like that of radishes; variable, but known by its white milk.—*M. J. B.*

Sect 5. Glutinipedes—stem viscid, not milky.

201. Agaricus (Mycena) epipterygius. *Scop.* "Yellow-stem Mycena."

Pileus membranaceous, campanulate, then expanded, rather obtuse, striate, cuticle viscid, separable; stem elongated, tough rooting, smooth, viscid, yellowish; gills adnate, with a decurrent tooth, variable in colour.—*Fr. Epicr. p. 116. Sow. t. 92. Fl. Dan. t. 2078, f. 2. Eng. Fl. v. p. 62. Schæff. t. 31.*

Amongst fern leaves in woods. Aug.—Nov. Common.
[United States.]

Pileus 1 in. or more broad and high, obtuse, sometimes umbilicate, cinereous yellow, occasionally white, bluish or rufous, sub-membranaceous, margin striate and toothed, cuticle viscid, when moist easily tearing off; gills arcuato-adnate, sub-decurrent, partaking of the colour of the pileus. Stem 3-4 in. high, about 1 line thick, full yellow, viscid, smooth, tomentose at the base.—*M.J.B.*

202. Agaricus (*Mycena*) pelliculosus. Fr. “Pelliculose *Mycena*.”

Pileus membranaceous, campanulate, then convex, obtuse, lineato-striate, cuticle viscid, separable; stem short, smooth, viscid, livid; gills distant, glaucescent, joined behind and slightly decurrent.—*Fr. Epicr. p.* 116. *B. & Br. Ann. N.H. no.* 788, no. 1110*.

On heaths, on the ground. Hanham.

Pileus $\frac{1}{2}$ -1 in., grey. Stem rather thickened above, short, viscid, livid, or brownish; remarkable amongst its allies for the viscid separable cuticle.

203. Agaricus (*Mycena*) vulgaris. P. “Common *Mycena*.”

Pileus somewhat membranaceous, convex, then depressed, papillate, viscid; stem tough, fibrillose at the base, rooting, cinereous; gills sub-decurrent, thin, white.—*Fr. Epicr. p.* 116. *Fl. Dan.* 1678, f. 2. *Berk. Outl. t.* 6, f. 4. *Mag. Zool. & Bot. no.* 46. *Pers. Ic. Pict. t.* 19, f. 3. *Berk. exs. no.* 133.

On plantations, especially of larch. Oct. [United States.]

Gregarious. Stem 1-2 in. long, about 1 lin. thick, greyish, rooting at the base, and whitish strigose. Pileus 3 lin. and more broad, slightly viscid, grey or tawny.

204. Agaricus (*Mycena*) citrinellus. P. “Lemon-coloured *Mycena*.”

Pileus membranaceous, hemispherical, then plane, umbonate, striate, viscid, as well as the stem, which is villous at the base and lemon-coloured; gills uncinatate, white.—*Fr. Ep. p.* 116. *Pers. Ic. Desc. t.* 11, f. 3. *Fl. Dan. t.* 1614, f. 1. *Batsch. f.* 88.

In fir woods, &c.

Small, delicate, becoming pale. Pileus 2-3 lin. broad, scarcely viscid, lemon-coloured, with the disc darker. Gills distant. Spores $\cdot 00033 \times \cdot 00028$ in.

205. Agaricus (Mycena) roridus. Fr. "Dripping Mycena."

Very delicate; pileus very thin, convex, sub-umbilicate, sulcate, dry; stem thread-like, very glutinous; gills decurrent, distant, white.—*Fr. Epicr. p. 117. Eng. Fl. v. p. 30**.

On dead bramble-twigs, &c.

Pileus $\frac{1}{2}$ in. broad, or more, dirty ochraceous, at length umbilicate, and slightly depressed, striate or plicate, often rugose, very minutely scabrous under a high magnifier. Gills white, strongly decurrent, broad, their edge powdery; stem $1\frac{1}{2}$ in. or more high, very slender, fistulose, at first tinged with violet above, at length dirty ochre, pulverulent within the pileus, below clothed with abundant white pellucid gluten, which almost drips from it; sometimes the whole plant is nearly white.—*M. J. B.*

Sect. 6. Basipedes—stem dry, dilated at the base into a little disc.

206. Agaricus (Mycena) stylobates. P. "Discoid Mycena."

Pileus membranaceous, campanulate, obtuse, striate, sub-pilose; stem filiform, smooth; base orbicular, plane, villous, striate; gills free, distinct, ventricose.—*Fr. Epicr. p. 117. Berk. Outl. t. 6, f. 5. Pers. Syn. t. 5, f. 4. Sturm. t. 29. Fl. Dan. t. 2025, f. 3. Eng. Fl. v. p. 61.*

On fern, twigs, &c. Aug. [S. Carolina.]

Pure white. Pileus 2 lines or more broad, campanulate or hemispherical, sometimes broadly and obtusely umbonate, striate, with a round mark in the centre caused by the insertion of the stem, minutely pilose, not granulose; gills unequal, rounded, free. Stem 1-2 in. high, $\frac{1}{2}$ line thick, rather thicker at the base, flexuous, fistulose, downy or minutely pilose, though sometimes, as the pileus becomes quite smooth, fragile, adhering by a broad membranous, tomentose, radiato-striate disc.—*M. J. B.* Spores '0001 × '00005 in.

207. Agaricus (Mycena) tenerrimus. Berk. "Delicate Mycena."

White, very delicate; pileus convex, pruinose; stem pilose, adhering by a minute pubescent disc; gills free, ventricose.—*Berk. Outl. t. 6, f. 6. Eng. Fl. v. p. 61.*

On fir-cones, sticks, &c.

Gregarious, pure white. Pileus 1-1 $\frac{1}{2}$ lines broad, very delicate, tender, and easily injured, not pilose, but frosted with minute granules; gills distant, unequal. Stem 1 in. high, scarce $\frac{1}{2}$ line thick, flexuous, fistulose, adhering by a minute pubescent disc, which is not the least striate; spores white, round.—*M. J. B.*

208. Agaricus (Mycena) pterigenus. *Fr.* "Fern-stem Mycena."

Very delicate, rose-coloured ; pileus campanulate, obtuse, nearly even ; stem flexuose, thread-like, smooth ; base swollen into a little bulb, which is radiato-strigose ; gills adnate, broad, distant, entire.—*Fr. Epicr.* p. 118. *Pers. M.E.t.* 28, f. 6. *Berk. Outl.* t. 6, f. 7. *Eng. Fl.* v. p. 63. *Mag. Zool. & Bot.* no. 47. *Berk. exs.* no. 134.

On dead fern stems. Rare.

This species varies in different individuals from bright orange-red to rose-colour, occasionally the upper part of the stem is brown ; the gills are ornamented with a bright orange margin ; the pileus in the young state is oblong, oval, obtuse, minutely furfuraceous at the apex, marked with darker, slightly anastomosing veins, which at length, in consequence of the quicker growth of the subjacent stratum, and the collection of the veins themselves into bundles radiating from the centre, form striæ on the pileus. The stem under a high magnifier is often streaked with veins like the pileus.—*M. J. B.* A variety on oak leaves is described in "*Eng. Fl.*"

Sect. 7. Insititiæ—stem slender, dry, growing on other plants, without root ; gills adnate, with decurrent tooth.

209. Agaricus (Mycena) corticola. *Schum.* "Bark Mycena."

Pileus thin, hemispherical, at length obsoletely umbilicate, sulcato-striate ; stem slender, short, incurved, furfuraceous ; gills broadly adnate, uncinatè, broad, rather ovate, pallid.—*Fr. Epicr.* p. 118. *Mich. t.* 74, f. 8. *Bull. t.* 519, f. 1. *Eng. Fl.* v. p. 62. *Schn. Sturm t.* 2. *Sow. t.* 243.

Amongst moss on bark.

[S. Carolina.]

Gregarious. Pileus 1-3 lines broad, hemispherical, in general obtuse, but sometimes slightly papillose, rarely umbilicate, umber, white, cinereous, lilac, flesh-coloured, rufous, bluish, &c., flesh rather thick in proportion ; gills variously adnato-uncinate or sub-decurrent, partaking more or less of the colour of the pileus ; stem $\frac{1}{2}$ -1 in. high, incurved, minutely pulverulent, stuffed, and not truly fistulose, minutely strigose, or tomentose at the base. The whole plant dries up in dry weather, but revives with the first shower.—*M. J. B.* Spores '0003 \times '00015 in.—*W. G. S.*

210. Agaricus (Mycena) hiemalis. *Osbeck.* "Winter Mycena."

Pileus thin, campanulate, obsoletely umbonate, margin striate ; stem slender, ascending, downy below ; gills adnate, linear, whitish.—*Fr. Epicr.* p. 119. *B. & Br. Ann. N.H.*, 1865, no. 993. *Bull. t.* 519, f. i. a.

On trunks of trees. Nov. Apethorpe. North Badminton, Gloucestershire.

A more delicate species than *A. corticola*; stem longer, colour constantly paler, whitish, pinkish-red, &c.

211. *Agaricus (Mycena) setosus.* Sow. "Setose Mycena."

Pileus very delicate, hemispherical, obtuse, smooth; stem thread-like, covered with spreading hairs; gills distant, white.—*Fr. Epicr. p. 119. Sow. t. 302. Eng. Fl. v. p. 64.*

On dead leaves in woods.

Pileus not $\frac{1}{16}$ in. broad; stem $\frac{1}{2}$ in. long, finer than a hair, closely allied to *Ag. capillaris*, from which it is distinguishable by the spreading hairs of the stem.

212. *Agaricus (Mycena) capillaris.* Schum. "Capillary Mycena."

Very delicate, white; pileus campanulate, at length umbilicate, smooth; stem thread-like, smooth; gills adnate, ascending, rather distant.—*Fr. Epicr. p. 119. Fl. Dan. t. 1670, t. 2142, f. 1. Bull. t. 601, f. 2 C. Hoffm. t. 5, f. 2. Eng. Fl. v. p. 64. Mich. t. 80, f. 10-11.*

On dead leaves, in woods.

Pileus $\frac{1}{2}$ -1 line broad, at first conic, like the head of a very small pin, grey, the margin rounded, the stem dark above, and minutely pulverulent, gradually the stem elongates extremely, becoming much finer, the pileus hemispherical, delicate, white, with a dimple in the centre; gills very few, two or three only, in general reaching the stem, in specimens 1 line broad, regularly ascending about 9, adnate, with two or three intermediate ones; stem flaccid, extremely slender, very minutely dilated at the base.—*M. J. B.* Spores very minute, oval, '000018 in. long.

213. *Agaricus (Mycena) juncicola.* Fr. "Rush Mycena."

Very delicate; pileus convex, striate, smooth, rufescent; stem thread-like, smooth, brownish; gills adnate, distant, white.—*Fr. Epicr. p. 19. Mich. t. 80, f. 9. Paul. t. 105, f. 11. Bull. t. 148, f. D. Eng. Fl. v. p. 63.*

On dead rushes, in bogs. June. July. Rare.

Pileus 1 line broad, of a deep blood red, inclining to tawny, sometimes minutely umbonate, at length depressed, distinctly and broadly striate; stem 1 in. high, brown, paler above, smooth; gills few, yellowish white, at length detached, so as to form a collar round the stem.

Sub-Gen. 9. OMPHALIA. Fr. *Epicr. p. 119.*

Pileus generally from the first umbilicate, afterwards funnel-shaped, almost always membranaceous or sub-membranaceous

and hygrophanous, margin incurved or straight ; stem cartilaginous and tubular, when young often stuffed, confluent with the hymenophore, but heterogeneous from it ; gills truly and considerably decurrent.

HAB. Generally epiphytal, and mostly peculiar to hilly regions, preferring a damp, woody situation, and a rainy climate.—*Pl. II. fig. 9.*

The species, though small, are many of them beautiful ; their properties are not known, and they endure changes of temperature like the hygrophanous species of *Clitocybe*. *Omphalia* is naturally divided into two groups—one, *Collybariæ*, approaching *Collybia*, and the other, *Mycenariæ*, *Mycena*.

A. *Collybariæ*.

Sect. 1. Pyxidatæ—pileus depressed.

214. *Agaricus (Omphalia) pyxidatus*. *Bull.* “Variable *Omphalia*.”

Pileus sub-membranaceous, umbilicate, then funnel-shaped, smooth, hygrophanous ; margin striate ; stem stuffed, then hollow, even ; gills decurrent, rather distant, narrow, reddish grey.—*Fr. Epicr. p. 122. Bull. t. 568, f. 2. Ann. N.H. no. 144. Berk. Outl. t. 6, f. 8. Eng. Fl. v. p. 65-30*. Sow. t. 210. Berk. exs. no. 14.*

Amongst short grass, on lawns, &c. Nov.

Pileus smooth ; disc sub-membranaceous ; gills decurrent, rather distant, narrower than in any neighbouring species, dirty white, with a rufescent tinge, then of the same colour as the pileus ; stem when young stuffed, then hollow, thickened at the base, and there clothed with whitish down, sub-attenuated upwards.—*Fries.* Variable in size and colour, flesh-coloured, brick red, dirty tawny, rufous, &c.

215. *Agaricus (Omphalia) hepaticus*. *Batsch.* “Liver-coloured *Omphalia*.”

Tough, rigid ; pileus smooth, rather shining, even ; stem at length compressed, flesh-coloured, inclined to rufous ; gills distant, connected by veins, and forked, rather thick, pallid.—*Fr. Epicr. p. 122. Batsch. f. 211. Berk. Outl. p. 131.*

On lawns.

Stem about 1 in. long, 1 lin. thick, flesh colour, inclining to brown, naked, rarely pruinose ; pileus becoming funnel-shaped, $\frac{1}{2}$ -1 $\frac{1}{2}$ in. broad, even, red brown when moist, tawny or tan-coloured when dry.

- 216. *Agaricus (Omphalia) affricatus.* Fr.** "Hairy Bog Omphalia."

Pileus sub-membranaceous, umbilicate, then infundibuliform, obscurely variegated with hair-like squamules; stem fistulose, glabrous, cinereous; gills decurrent, rather distant, broadest in the middle, greyish white.—*Fr. Epicr. p. 123. B. & Br. Ann. N.H. 1865, no. 994.*

On *Sphagnum*. Aug. Aboyne, Aberdeenshire.

"Pileus $\frac{3}{4}$ in. across, infundibuliform or deeply umbilicate, hygrophanous, brown, then mouse-coloured, minutely virgate; stem compressed, tomentose at the base; gills distinct, distant, ending abruptly, decurrent."—*B. & Br.*

- 217. *Agaricus (Omphalia) sphagnicola.* Berk.** "Bog-moss Omphalia."

Tough; pileus infundibuliform, sub-carnose, minutely squamulose, moist; stem fistulose; gills narrow, dirty-ochraceous.—*Berk. Outl. p. 131. Eng. Fl. v. p. 67.*

On *Sphagnum*. June.

Whole plant tough and elastic; odour scarcely any; pileus 1-1½ in. broad, funnel-shaped from a very early stage of growth, faintly striate, and minutely squamulose, dirty ochraceous, becoming darker in age, moist, but not viscid; gills pale, decurrent, narrow, moderately distant, thick, so as to present in front a flat edge; stem 1-2 in. long, 1 line thick, hollow, somewhat cracked, smooth, except at first, when it is very minutely squamulose above; in age it is nearly pervious above.—*M. J. B. Spores '00025 × '00017 in.*

- 218. *Agaricus (Omphalia) oniscus.* Fr.** "Bolton's Omphalia."

Pileus sub-membranaceous, convex, then plane or depressed, remotely radiato-striate, smooth, hygrophanous; stem sub-fistulose, firm, equal; gills adnate, decurrent, straight, somewhat distant, livid, or whitish, as well as the stem.—*Fr. Epicr. p. 123. Bolt. t. 41, f. C. c.*

In swamps.

Stem rather firm, about an inch long, and a line thick, straight or curved, grey. Pileus flaccid, irregular, scarcely 1 in. broad, smooth, dark cinereous, paler when dry. Spores '00025 × '00022 in.

Sect. 2. Umbelliferæ—parasol-like.

- 219. *Agaricus (Omphalia) muralis.* Sow.** "Wall Omphalia."

Pileus sub-membranaceous, umbilicate, radiato-striate, smooth, margin crenulate; stem somewhat stuffed, short, tough, brownish rufous; gills decurrent, distant, paler.—*Fr. Epicr. p. 124. Sow. t. 322. Eng. Fl. v. p. 65.*

On old walls, banks, &c., amongst moss. [Cincinnati.]

Pileus at length funnel-shaped, $\frac{1}{3}$ -1 in. broad, convex, reddish brown; gills broad, pale, whitish-brown, distant, decurrent; stem $\frac{1}{4}$ - $\frac{1}{2}$ in. high, thickish, usually sub-incurved, pale-brown, solid.—*Grev.*

220. Agaricus (Omphalia) umbelliferus. *L.* "Common Omphalia."

Pileus between fleshy and membranaceous, convexo-plane, ob-conic, brittle, radiato-striate, when dry becoming pallid, even, silky; margin at first inflexed, crenate; stem sub-fistulose, equal, base downy; gills decurrent, very distant, broad behind.—*Fr. Epicr. p. 125. Hed. Obs. t. 3. Holms. ii. t. 34. Fl. Dan. t. 1015, t. 1672, f. 1. Buxb. ii. t. 50, f. 4. Eng. Fl. v. p. 65. Berk. Ann. N.H. no. 267.*

In swamps, exposed pastures, &c. Common. [Cincinnati.]

Subgregarious. Pileus $\frac{1}{2}$ -1 in. broad, depressed in the centre, margin deflexed, and sometimes waved, striate, whitish, whitish-brown, or yellow, darker when moist; gills broad towards the stem, whitish, decurrent; stem $\frac{1}{2}$ -1 in. high, about 1 line thick, whitish or yellowish, paler below, and pubescent.—*Grev.* Spores $\cdot 0001 \times \cdot 00012$ in.

221. Agaricus (Omphalia) rufulus. *B. & Br.* "Reddish Omphalia."

Pileus umbilicate, reddish-grey, growing pale, somewhat mealy; stem of the same colour, shining; gills decurrent, rather thick, forked, flesh-coloured.—*Ann. Nat. Hist. Oct. 1848, p. 260, no. 325. Berk. Outl. p. 132.*

On an exposed common, amongst *Polytrichum*. Hanham, near Bristol.

Pileus $\frac{1}{2}$ in. across, at first convex, soon expanded, and umbilicate, sub-carnose, reddish grey or buff, at length pale, minutely mealy, margin crenulate; stem $\frac{1}{2}$ in. high, 1 line thick, flexuous, same colour as the pileus, smooth, shining, solid; gills decurrent, rather thick, flesh-coloured, especially towards the margin, forked, rather distant, interstices veiny; spores oblong, oblique, with somewhat the aspect of *A. laccatus*.—*M. J. B.*

222. Agaricus (Omphalia) stellatus. *Sow.* "Stellate Omphalia."

White. Pileus membranaceous, convex, umbilicate, smooth, silky, diaphanous; stem somewhat stuffed, equal, fragile, base floc-coso-radiate; gills decurrent, thin, broad, very distant.—*Fr. Epicr. p. 126. Eng. Fl. v. p. 64. Sow. t. 107. Ann. N.H. no. 268.*

On sticks, decayed herbaceous stems, &c. Oct.

Gregarious. Pileus 4 lines broad, striated; gills thin; stem scarcely 1 in. high, stuffed, incurved, brittle.—*Fries.*

B. *Mycenariae*.

Sect. 3. At first campanulate, margin straight.

- 223. *Agaricus (Omphalia) campanella.* Batsch.** "Tawny Omphalia."

Pileus membranaceous, convex, umbilicate, striate, hygrophaneous; stem fistulose, attenuated below, clothed with tawny, spongy down; gills decurrent, arcuate, connected by veins, yellow.—*Fr. Epicr. p.* 126. *Nees. f.* 191. *Schæff. t.* 230. *Eng. Fl. v. p.* 66.

In fir woods.

[United States.]

Often caespitose. Pileus ferruginous-yellow, 3-7 lines broad, tough; gills connected by veins; stem 2 in. long, rooting from below.—*Fries.*

var. β. badipus. Solitary or sub-caespitose; stem stuffed, thickened at the base, clothed with ferruginous down.—*Eng. Fl. v. p.* 66. *A. caulicinalis.* *Sow. t.* 163.

Amongst leaves, &c. Oct.

Pileus 3-11 lines across, broadly campanulate, umbilicate, sometimes quite plane, of a beautiful yellow, inclining to ferruginous, edge slightly silky; gills yellow, arcuate, sub-decurrent, beautifully connected by veins; stem 1-2 in. high, $\frac{1}{2}$ -1 line thick, scarcely fistulose, yellow above, then rufescent, clothed with little yellow scales, thickest below, and there covered with a dense tawny tomentum.—*M. J. B.*

- 224. *Agaricus (Omphalia) camptophyllus.* Berk.** "Berkeley's Omphalia."

Pileus convexo-plane, deeply striate; stem minutely pubescent, radiato-strigose at the base, minutely fistulose; gills white, ascending, then suddenly decurrent.—*Berk. Eng. Fl. v. p.* 62. *Outl. p.* 133.

On sticks, &c. Rare. Margate.

Solitary or sub-gregarious. Pileus $\frac{1}{2}$ in. broad, dry, convex, obtuse, sub-hemispherical, smooth, brown, with a grey margin, gills rather distant, at first adnate, nearly plane, then ascending and suddenly decurrent. Stem 2 in. or more high, not a line thick, sub-flexuous, somewhat rigid, minutely fistulose, with a few white fibres, under a lens minutely but beautifully pubescent; base radiato-strigose, at first yellow, when full-grown pale above, pale rufescent below.—*M. J. B.*

- 225. *Agaricus (Omphalia) griseus.* Fr.** "Grey Omphalia."

Pileus sub-membranaceous, campanulate, then convex, smooth, striate, hygrophaneous; stem fistulose, rather firm, smooth, self-coloured; gills slightly decurrent, arcuate, rather thick, sub-distant, whitish-grey.—*Fr. Epicr. p.* 127. *Ann. N.H. no.* 141.

In pine woods.

Stem 3 in. long, 1 lin. thick, slightly thickened above, straight, smooth, whitish, cinereous. Pileus $\frac{1}{2}$ in. broad, striate, hygrophanous, livid grey, becoming hoary.

226. Agaricus (Omphalia) helvelloides. Bull. "Delicate Omphalia."

Pileus obconic, umbonate, at length depressed, somewhat funnel-shaped, remotely radiato-sulcate; stem elongated; gills thick, forked, decurrent, broad in front.—Bull. t. 601, f. 3. Berk. Outl. p. 132. Ann. N.H., no. 324.

On the ground. Oct.

Far more graceful and delicate than any form of *A. umbelliferus*.

227. Agaricus (Omphalia) fibula. Bull. "Button Omphalia."

Pileus membranaceous, turbinate, expanded, then somewhat umbilicate, striate, becoming pale, dry, even; stem slender, nearly orange colour, as well as the pileus; gills strongly decurrent, distinct, paler.—Fr. Epicr. p. 127. Bull. t. 186, t. 550, f. 1. Sow. t. 45. Fl. Dan. t. 1071, f. 2. var. Eng. Fl. v. p. 65.

Amongst moss. Sept.—May. Common. [United States.]

Pileus 1-6 lines broad, at first hemispherical; margin inflexed, then plane, more or less depressed, yellow or tawny, with a dusky centre, obscurely striated, the whole minutely pilose; gills yellowish or white, distinct, not ventricose, decurrent; stem 1-1 $\frac{1}{2}$ in. high, not a line thick, slender, yellow or tawny, with a violet-brown apex, the whole minutely pilose, like the pileus, and obsoletely fibrillose.—M. J. B. Spores $\cdot 00013 \times \cdot 00008$ in.—W. G. S.

[Pl. II., fig. 9, nat. size.]

228. Agaricus (Omphalia) gracillimus. Weinm. "Delicate Omphalia."

Snow-white; pileus membranaceous, hemispherical, sub-flocculose, sulcate; stem filiform, slender, floccose at the base; gills decurrent, thin, alternately sub-dimidiolate.—Weinm. p. 121. Fr. Ep. p. 128. B. & Br. Ann. N.H. (1866), no. 1112.

In marshy ground, on decaying stems of vegetables. Aug. King's Cliffe.

Pileus sometimes depressed, sometimes papillate, 2-3 lines broad; stem 3-6 lines long.

229. Agaricus (Omphalia) belliae. Johnst. "Cup-like Omphalia."

Pileus dry, membranaceous, cup-shaped, of a pale wood-colour; stem thin, fistulose, cartilaginous, pale above, brownish below, adhering by a floccose base; gills thick, paler than the pileus, decurrent, interstices veiny.—Ann. Nat. Hist. ser. i, vol. vi., t. 10, f. 1. Berk. Outl. p. 134.

On dead stems of reed. Oct. Berwickshire.

Pileus membranaceous, inverted, deeply cyathiform, $\frac{1}{2}$ in. broad, smooth, waved and furrowed at the edges, of a wood-brown hue, becoming paler when dry; gills adnato-decurrent, at least in the inverted pileus, 1 line broad, rather distant, thick, more or less undulated, wrinkled on the sides and in the interstices with flexuous veins, once or twice divided near the edge, of a dull chalky white. Spores oblong, colourless, pellucid. Stem $1\frac{1}{2}$ in. high, about 1 line thick, fistulose, erect, stiff, and elastic, smooth, white, or very pale wood-brown above, towards the base of a dirty dark brown, becoming paler when dry, then apparently mealy; root slightly incrassated, bent, fixed by a dense cottony web.—*M. J. B.*

230. Agaricus (Omphalia) integrellus. *P.* "Little-white Omphalia."

White, fragile; pileus membranaceous, hemispherical, then expanded, pellucid; striate; stem very slender, short, pubescent below; gills decurrent, distant, slightly branched, edge acute.—*Fr. Epicr. p.* 128. *Pers. Ic. & Des. t.* 13, *f.* 5. *Eng. Fl. v. p.* 64. *Ann. N.H. no.* 142. *Ray. Syn. t. i., f.* 2, *a. a.*

On decayed sticks. Rare.

Cæspitose. Pileus 2-3 lines broad, at first hemispherical, obtuse, at length rather plane, substance thin, pellucid. Gills narrow, arcuate, decurrent, notwithstanding the form of the pileus, some branched, especially in younger specimens, with but few short ones. Stem 1 in. high, fistulose, sub-pulverulent, villous at the base.—*Pers.*

Series 2. **Hyporhodii**, *Fr. Epicr. p.* 138.—Spores pink or salmon-colour.

There is not one quarter so many Agarics bearing pink or salmon-coloured as white spores. The size of the spores varies greatly. A few are very small, others equally large (see Plate), whilst the majority are remarkably irregular, resembling the fragments of granite seen in the roads. Some of the species are edible, as in *Clitopilus* (analogous with the white-spored edible species of *Clitocybe*), whilst others are poisonous, as in *Entoloma*, reminding us of such dangerous species of *Tricholoma* as *A. sulfureus*, Bull, etc.—*W. G. S.*

Sub-Gen. 10. **VOLVARIA**, *Fr. S. M. i. p.* 277.

Spores regular in shape, oval or pip-shaped, pink or salmon-colour; veil universal, forming a perfect volva (c), distinct from the cuticle of pileus (Δ); stem distinct from the hymenophore; gills free, rounded behind, at first white, then pink, soft, liquescent.

HAB. Gardens and hot houses, and in woods and on manured ground, growing on rotten wood and damp ground; one species is parasitic on *Agaricus nebularis*.—(*Plate III., fig.* 10.)

The species of *Volvaria* are very closely allied; some appear in spring and early summer, others later in the year; they are almost tasteless, and none are known to be edible. *Volvaria* corresponds with *Amanita*.—*W. G. S.*

Sect. 1. Silky or fibrillose.

231. *Agaricus (Volvaria) bombycinus.* Schæff. "Silky Volvaria."

Pileus fleshy, soft, campanulate, then expanded, sub-umbonate, silky, fibrillose, self-coloured; stem solid, attenuated, smooth, volva very large; gills free, flesh-coloured.—*Fr. Epicr. p. 138. Schæff. t. 98. Krombh. t. 23, f. 15-21. Berk. Outl. t. 7 f. 1. Eng. Fl. v. p. 104. Barla. t. 25, f. 1-5.*

On decayed wood. Rare.

[S. Carolina.]

Pileus 3-4 in., at first entirely enclosed in a slimy dark volva, at length protruded, campanulate, dirty white, silky, with yellowish white narrow silky scales, and marked frequently with a few dark blotches, the remains of the volva, flesh whitish, firm, elastic, margin involute; gills numerous, close, ventricose, quite free, not reaching the margin, at first white, then rose-coloured, with a tinge of yellow, at length deliquescent, tinged with umber. Stem $2\frac{1}{2}$ in. high, $\frac{1}{2}$ in. thick in the centre, firm, solid, thickest downwards, the tough volva remaining like a cup at the base.—*M. J. B.*

232. *Agaricus (Volvaria) volvaceus.* Bull. "Stove Volvaria."

Pileus fleshy, soft, campanulate, then expanded, obtuse, virgate, with adpressed black fibrils; stem solid, subequal; volva loose; gills free, flesh-coloured.—*Fr. Epicr. p. 138. Bull. t. 262. Fl. Dan. t. 1731, f. 2. Letell. t. 623. Sow. t. 1. Eng. Fl. v. p. 104. Barla. t. 25, f. 6. 13. Vent. t. 22.*

In stoves, by roadsides, &c. July. Aug. [S. Carolina.]

Pileus 3-4 in. broad, obtuse, pallid, cinereous, with cinereous and black streaks; gills obtuse behind, almost remote; stem 3-5 in. high, $\frac{1}{2}$ in. thick, white; gills adhering, almost delinquescent as in *Coprinus*. Spores $\cdot 0002 \times \cdot 00013$ in.—*W. G. S.*
(*Pl. III., fig. 10, reduced.*)

233. *Agaricus (Volvaria) Loveianus.* Berk. "Parasitic Volvaria."

Pileus thin, fleshy, subtruncate, globose, then convex, obtuse, white, silky; stem solid, attenuated upwards; volva loose, lobed; gills free, rose-coloured.—*Berk. Outl. p. 140, t. 7, f. 2. Fr. Epicr. p. 139. Smith. Seem. Jour. Dec. 1867. Eng. Fl. v. p. 104.*

Parasitic on *A. nebularis*. Rare.

Cæspitose. At first appearing like a small round *Bovista*, from the size of a pea upwards, then oblong, and the top of the pileus, which at that stage is flattish, bursts through the volva, which is ultimately split into three or four regular laciniae, with a somewhat wrinkled surface, and the pileus from sub-

truncato-globose, becomes convex, or slightly expanded, $2\frac{1}{2}$ in. broad, moderately fleshy and beautifully silky, white, with a slight shade of pink or cinereous, margin involute; gills broad in front, quite free, sub-deliquescent, gradually with a pink tinge. Stem 2 in. high, 2-3 lines thick, white, closely fibrillose, juicy, solid, bulbous, volva pure white. Spores minute, elliptic, rosy, $\cdot 0001$ in. long. Artificially developed by Mr. W. G. Smith, from specimens of *Ag. nebularis*.—(Seem. Journal.)

234. Agaricus (Volvaria) Taylori. Berk. "Taylor's Volvaria."

Pileus thin, conical, obtuse, livid, striato-rimose from the apex; stem pale, solid, nearly equal; volva lobed, brown, small; gills uneven, broad in front, attenuated behind, rose-coloured.—Berk. *Outl.* p. 140. *Ann. N.H.* no. 675.

On the ground. Jersey.

Pileus $1\frac{3}{4}$ in. high and broad, beautifully pencilled and cracked, margin lobed and sinuated; stem $2\frac{1}{2}$ in. high, $\frac{1}{4}$ in. thick, slightly bulbous at the base; gills uneven. The dark volva, campanulate pileus, and uneven attenuated gills are marked characters.—*M. J. B.*

235. Agaricus (Volvaria) parvulus. Weinm. "Little Volvaria."

Pileus rather fleshy, conic, then expanded, umbonate, dry; stem stuffed, equal, silky; volva small, lobed; gills free, rose-coloured. *Fr. Epicr.* p. 139. *Bull. t.* 330. *Pers. Obs. t.* 4, f. 4-5. *Krombh. t.* 3, f. 20? *A. pusillus.* Berk *Out.* p. 140.

In pastures, after stormy weather. [S. Carolina.]

Abounds some years in autumn, in exposed rather rich pastures, and may be confounded by superficial observers with the true mushroom; but a glance at the volva, which is always present, and the attenuated stem, is sufficient to prevent mistakes—a point of some consequence, as the qualities of all the species in the sub-genus are, to say the least, doubtful.—*M. J. B.* Spores $\cdot 0002 \times \cdot 00014$ in.

Sect. 2. Pileus smooth, sub-viscid.

236. Agaricus (Volvaria) speciosus. Fr. "Dunghill Volvaria."

Pileus fleshy, soft, campanulate, then expanded, obtuse, smooth, even, viscid, disc grey; stem solid, attenuated, rather bulbous; volva loose, villous, as well as the stem; gills free, rose-coloured.—*Fr. Epicr.* p. 139. *Fl. Dan. t.* 1737. *Krombh. t.* 26, f. 1-8. *Ann. N.H.* no. 902*.

On dunghills, roadsides, &c. [S. Carolina.]

Very closely allied to the next, but differing in the absence of a distinct umbo, and in the smooth margin of the pileus.

237. Agaricus (Volvaria) gloiocephalus. Fr. "Umbonate Volvaria."

Pileus fleshy, convex, then plane, umbonate, glutinous; margin striate; stem solid, equal, smooth; volva tuberose, sub-obiterated; gills free, white, then flesh-coloured.—Fr. *Epicr. p.* 140. *Letell. t.* 645, *f. H.* 1. *Gard. Chron.* 1860, *p.* 933, *fig. A. speciosus.* *Berk. Outl. t.* 7, *f.* 3. *Barla. t.* 26.

On the ground.

Pileus about 3 in. across, with a strong regular obtuse umbo in the centre, of a delicate mouse-grey, viscid when moist, but when dry shining, quite smooth, margin striate in consequence of the thinness of the flesh; stem 6 in. or more high, about $\frac{1}{2}$ in. thick in the centre, attenuated upwards, bulbous at the base, clothed with a few slight fibres, easily splitting, solid, rather dingy, ringless. Volva loose, villous like the base of the stem, splitting into several unequal lobes; the gills are broad, especially in front, narrower behind, and quite free, so as to leave a space round the top of the stem, white, tinged with greyish pink; margin slightly toothed. Smell strong and unpleasant, and taste disagreeable.—*M. J. B.*

Sub-Gen. 11. CHAMÆOTA. *Smith. Seem. Journal*, 1870.
(*Psalliota*, Fr. partly.)

Spores pale rose; stem distinct from the hymenophore, furnished with a fugitive ring; gills free.

HAB. On the ground, or on decayed wood.—(*Pl. III.*, *fig.* 11.)

Corresponds in structure with *Lepiota* and *Psalliota*. The species figured is *A. (Chamæota) xanthogrammus*, Cès. an Italian species.

238. Agaricus (Chamæota) cretaceus. Fr. "Chalky Chamæota."

Pileus fleshy, campanulate, then convexo-plane, naked, even, nearly smooth, or rivulose; stem hollow, equally attenuated, even, white; ring simple, reflexed, and again ascending; gills rather remote, broader in front, for a long time white.—Fr. *Epicr. p.* 213. *Sv. Bot. t.* 596, *f.* 2. *Krombh. t.* 26, *f.* 16, 17. *Berk. Outl. t.* 10, *f.* 5. *Ann. N.H. no.* 148.

In meadows and stoves.

Distinguished from *A. campestris* by its gills, which remain for a long time white, and are at length rose-coloured, and also by the spores, which are $\cdot 0001 \times \cdot 00015$ in.

239. Agaricus (Chamæota) echinatus. Roth. "Bristling Chamæota."

Pileus rather fleshy, campanulate, then expanded, obtuse; at first pulverulent, then squamose; stem fistulose, equal, floccoso-

pulverulent below the ring ; gills free, crowded, blood-red.—*Fr. Epicr. p. 215. Roth. Cat. ii. t. 9, f. 1. Ann. N.H. no. 147. Ag. hæmatophyllus. Mag. Zool. & Bot. no. 38, t. xv. f. 1.*

On peat beds in gardens. Rare. [S. Carolina.]

Solitary or gregarious, often fasciculate. Pileus 1-1½ in. broad, thin, brittle, chocolate, or olive brown, clothed with minute raised scales, and copious meal of the same colour ; flesh pale, not changing when cut ; gills varying greatly in breadth, rounded behind, quite free, but approximate, at first of a fine red, at length deep chocolate. Ring broad, fugacious, attached at first in ragged triangular laciniae to the edge of the pileus, mealy externally, of a beautiful pink within ; stem 1½ in. high, 1-2 lines or more thick, chocolate-red when rubbed, clothed with meal, red within, stuffed, penetrating ; smell strong.—*M. J. B.*

Sub-Gen. 12. PLUTEUS. Fr. Epicr. p. 140.

Spores generally regular in shape, but in some species approaching the irregularity of *Hebeloma*, pink or salmon-colour, more or less bright, some approaching in colour the spores of genus 5, *Paxillus*, others sub-genus 19, *Flammula* ; veil none ; pileus of the same nature with the stem and gills, smooth, silky, or wrinkled ; stem ringless and without a volva, distinct from the hymenophore ; gills free, at first white, then yellowish, afterwards pink, very crowded, almost cohering, sometimes subliquescient.

HAB. The species almost always grows on, or *close to*, the trunks of trees.—(*Pl. III., fig. 12.*)

The characters of this sub-genus agree with those of *Volvaria*, with the exception of the volva, which is absent in *Pluteus*. Fries thinks it doubtful whether the pellicle of the pileus, always fibrous, flocculose, or pruinose, should not be considered as a universal concrete veil, which would give an analogy with *Lepiota*. The species of *Pluteus* appear in spring, early summer, or late in the autumn. They are tasteless, and none edible.—*W. G. S.*

Sect. 1. Pileus with evanescent fibrils.

240. Agaricus (Pluteus) cervinus. Schæff. "Fawn Pluteus."

Pileus fleshy, campanulate, then expanded, nearly even, smooth, then clad with evanescent fibrillose scales ; margin naked ; stem solid, with black fibrils ; gills free, crowded, white, then flesh-coloured.—*Fr. Epicr. p. 140. Schæff. t. 10. Sow. t. 108. Batsch. f. 76. Krombh. t. 2, f. 7-10. Sturm t. 28. Fl. Dan. t. 1067, f. 2.*

On trunks of trees.

Pileus 3 in. and more broad, dingy, growing pale, sometimes tawny yellow. Spores very bright, orange pink. '00023 × '00018. in.

[*Pl. III., fig. 12, reduced.*]

241. Agaricus (Pluteus) umbrosus. *Pers.* "Brown Pluteus."

Pileus fleshy, campanulate, then expanded, lacunose, rugose, at first villous; margin ciliate or fimbriate; stem solid, villososquamulose; gills free (sub-fuliginous), margin fimbriate.—*Fr. Epicr. p.* 140. *Pers. Ic. & Desc. t.* 2, *f.* 5-6. *A. umbrinus. Berk. Outl. p.* 141.

On dead trunks.

Blackish umber. Pileus 3 in. broad.

Sect. 2. Pileus pruinatè, sub-pulverulent.

242. Agaricus (Pluteus) nanus. *P.* "Mealy Pluteus."

Pileus somewhat fleshy, convexo-plane, rugulose, obtuse, sprinkled with dingy meal; stem solid, rigid, short, striate, white; gills free, white, then flesh-coloured.—*Fr. Epicr. p.* 141. *Ann. N.H. no.* 676. *Bull. t.* 547, *f.* 3.

On fallen sticks. Aug.

[S. Carolina.]

Pileus umber, about 1 in. broad. Stem 1 in. long, 1-2 lin. thick. Spores irregular hexagons, &c., very pale rose, average diameter about .00023 in.

Sect. 3. Pileus naked, smooth.

243. Agaricus (Pluteus) petasatus. *Fr.* "Broad-capped Pluteus."

Pileus fleshy, campanulate, then expanded, umbonate, very smooth, with a viscid cuticle, membranaceous to the middle, and at length striate; stem solid, tall, rigid, fibrilloso-striate, attenuated equally from the base; gills free, very broad, much crowded, drying up, white, then reddish.—*Fr. Epicr. p.* 142. *Ann. Nat. Hist., xiii., t.* 9, *f.* 2, *no.* 271. *Gonn. & Rabh. iv. t.* 4.

On sawdust. Jan. Hitchin.

Stem 6 in. long, firm, pallid, at length tawny. Pileus 5-6 in., with a separable cuticle, pale cinereous, rather bright brown, &c.

244. Agaricus (Pluteus) leoninus. *Schæff.* "Yellow Pluteus."

Pileus sub-membranaceous, campanulate, then expanded, smooth, naked; margin striate; stem solid, smooth, striate; gills free, yellowish, then flesh-coloured.—*Fr. Epicr. p.* 142. *Schæff. t.* 48. *Berk. Outl. t.* 7, *f.* 4. *Pers. Ic. & Des. t.* 1, *f.* 3-4. *Eng. Fl. v. p.* 78.

On wood. Sept. Oct.

[S. Carolina.]

Solitary or sub-gregarious. Pileus 1-3 in. broad, tawny yellow, shaded with bright orange, or purplish brown, tinged with yellow, umbonate, flesh thick in the centre, margin thin, firm, covered with a smooth, wrinkled, glutinous cuticle, sometimes pitted round the umbo, margin more or less striate; gills rather broad, rounded behind and in front, flesh-coloured, moderately distant, perfectly free, edge at first yellowish. Stem 2-3 in. high, 2-6 lines thick, downy at the base, sometimes rooting, attenuated upwards, twisted and striate, yellow or ochraceous, shaded with orange, solid, at length imperfectly hollow. Spores rose-coloured, elliptic.—*M.J.B.*

245. Agaricus (Pluteus) chrysophæus. Schæff. "Dingy Pluteus."

Pileus sub-membranaceous, campanulate, then expanded, naked, nearly even, smooth or slightly virgate; margin striate; stem hollow, smooth; gills free, white, then flesh-coloured.—*Fr. Epicr. p. 142. Schæff. t. 253. Sow. t. 174. Grev. t. 173. Berk. Outl. t. 7, f. 5.*

On wood, hollow trees, &c.

[United States.]

Somewhat gregarious, distinct, or two or three growing from the same base. Pileus 1-3 in. convex, at length nearly plane, undulated at the margin, nearly membranaceous; colour yellowish or ochraceous brown. Surface glabrous, rugose, with veins in the direction from the centre to the circumference. Gills rather numerous, broad, ventricose, free. Stem 2-4 in. long, 2-5 lines thick, somewhat fistulose, whitish, mostly twisted, equal, except at the base, which is often thickened and frequently incurved.—*Grev.*

246. Agaricus (Pluteus) phlebophorus. Ditm. "Veined Pluteus."

Pileus rather fleshy, convex, then expanded, veined, rugose; margin naked, without striæ; stem hollow, smooth, incurved, shining; gills free, white, then flesh-coloured.—*Fr. Epicr. p. 142. Ditm. t. 15. Nees. f. 202. Eng. Fl. v. p. 79. Ann. N.H. no. 676*.*

On fallen sticks. Rare.

Pileus about 1 in. broad, convex, becoming nearly plane when mature, cuticle rugose, with prominent anastomosing veins, leaving deep pits between them, of a pleasant yellowish brown, or pale reddish orange, with the margin generally incurved. Gills broad, at first white, becoming flesh-coloured. Stem 2 in. high or more, hollow, incurved, ascending. A very beautiful species, distinguished at once by the rugose pileus; the pits are very deep, and the reticulations very distinct. Spores sub-globose, .0003 in. long, .0002 in. diameter.—*W.G.S.*

Sub-Gen. 13. ENTOLOMA. Fr. Epicr. p. 143.

Spores extremely irregular in shape, salmon colour, pink, or more or less approaching bright-red or brown; veil "potential rather than definite;" pileus, margin at first incurved, never at first umbilicate, fleshy, or thin according to the species, viscid,

smooth, hygrophanous, dry, silky, or flocculose; stem fleshy-fibrous, sometimes waxy, continuous with the hymenophore, and homogeneous with it; gills sinuated, as in *Tricholoma*, etc., almost free, or more or less adnate, sometimes parting from the stem.—(*Pl. III.*, fig. 13.)

HAB. All are terrestrial.

Allied to *Tricholoma*, but, with few exceptions, the species of *Entoloma* are much thinner and often brittle. Many possess the odour of new flour, but none are edible, and some highly poisonous. They appear in summer after heavy rains. Besides corresponding with *Tricholoma*, *Entoloma* agrees in structure with *Hebeloma* and *Hypoholoma*.—*W. G. S.*

Sect. 1. Genuini—pileus smooth, moist, or sub-viscid.

247. *Agaricus (Entoloma) sinuatus.* Fr. “Large-waved *Entoloma*.”

Pileus fleshy, convex, then expanded, sub-repand, even, smooth; stem solid, compact, fibrillose, whitish; gills adnexed, very broad, crowded, pale, rufescent.—*Fr. Epicr. p. 143. Saund. & Sm. t. 11. A. fertilis. Pers. M.E. 281. Bull. t. 547, f. 1, 590. Smith P.M. f. 14. Eng. Fl. v. p. 77.*

In woods. Poisonous.

[S. Carolina.]

Pileus 4 in. and upwards, expanded, obtuse, somewhat lobed, pulverulentosquamulose, fleshy, dry, pinkish-buff, with sometimes a tinge of yellow; gills rose-coloured, adnexed, nearly free; stem 3-6 in. high, $\frac{3}{4}$ -1 in. thick, stuffed, firm, fibrillose, sub-squamulose, sub-compressed, somewhat bulbous at the base, paler than the pileus. Spores brownish salmon, very irregular, .00035 in. diameter. Smell like that of fresh meal. (*Pl. III.*, fig. 13, reduced.)

248. *Agaricus (Entoloma) prunuloides.* Fr. “Plum-like *Entoloma*.”

Pileus fleshy, campanulate, then expanded, umbonate, even, smooth, sub-viscid; stem solid, unequal, smooth, sub-striate, white; gills free, ventricose, white, then flesh-coloured.—*Fr. Epicr. p. 144. Berk. Outl. p. 142.*

On the ground. Rare. Mossburnford.

Pileus white, yellowish, greyish, &c., at length longitudinally cracked; gills emarginate, rarely rounded, at first slightly adnexed.

249. *Agaricus (Entoloma) placenta.* Batsch. “Brown *Entoloma*.”

Pileus fleshy, convex, then plane, umbonate, regular, smooth, brown; stem solid, equal, fibroso-striate, brown; gills emarginate, adnexed, crowded, rather thick, pallid flesh colour.—*Fr. Epicr. p. 144. Batsch. f. 18. Ann. N.H. no. 789.*

On the ground. Oct. Swanage, Dorset.

Solitary; stem 2-3 in. long, 2-3 lin. thick, brown; pileus 1½ in. broad, orbicular, smooth, brown; gills separating from the hymenophore.

250. Agaricus (Entoloma) helodes. *Fr.* "Moor Entoloma."

Pileus slightly fleshy, convexo-plane, sub-umbonate, moist, becoming smooth; stem hollow, pallid, fibrillose; base rather thickened; gills emarginate, adnexed, somewhat distant, white, then flesh-coloured.—*Fr. Epicr. p. 144. Ann. N.H. no. 790.*

On moors. Coed Coch.

Pileus purple, dingy, brown, &c., when old becoming pale, spotted, not hygrophanous, 2 in. or more broad; stem 2-3 in. long, 3 lin. thick, pale, cinereous; smell like that of fresh meal.

251. Agaricus (Entoloma) repandus. *Bull.* "Repand Entoloma."

Pileus fleshy, conical, umbonate, indistinctly silky; margin lobed; stem short, solid, minutely silky, white; gills dull rose-coloured, broad in front.—*Bull. t. 423, f. 2. Berk. Outl. p. 143. Eng. Fl. v. p. 78. Ann. N.H. no. 676*.*

Amongst grass. Rare.

Pileus 1-2 in. across, conic, obtuse, at length expanded, very fleshy, the margin incurved and lobed, pale whitish, ochraceous, with a few streaky shades, clothed with a very close, adpressed, indistinct silkiness; gills pale dull rose, broad in front; stem 1½ in. high, 3 lines thick, white, beautifully adpresso-sericeous; spores rose-coloured, irregular, stellate; odour like that of fresh meal.—*M.J.B.*

252. Agaricus (Entoloma) Bloxami. *B. & Br.* "Blue Entoloma."

Pileus compact, campanulate, obtuse, somewhat lobed, moist, blackish-blue, somewhat silky; flesh white; stem slightly attenuated upwards, obtuse at the base; gills rather broad, attenuated, adnexed.—*Berk. Outl. p. 143. Ann. N.H. no. 677. Price, f. 89.*

In open exposed pastures.

Pileus 1 in. or more across, campanulate, very obtuse, moist, of a dark dingy blue or purple, or sometimes slate-coloured, tinged with lilac, slightly silky, inclined to be lobed below, flesh very thick in the centre, white, except near the edge, where it partakes of the hue of the pileus; stem 1½ in. high, ½ in. thick, attenuated upwards, of the same colour as the pileus, solid; gills moderately broad, pale pink, attenuated behind, or slightly adnexed.—*M.J.B.* Spores very irregular in shape, very brilliant pink orange, '0003 in. diameter.—*W. G. S.*

253. *Agaricus (Entoloma) ardosiacus.* Bull. "Meadow Entoloma."

Fragile ; pileus slightly fleshy, convex, then expanded and depressed, even, smooth, moist ; stem hollow, elongated, steel blue, attenuated from the white base ; gills nearly free, crowded, greyish, flesh-coloured.—*Fr. Epicr. p. 145. Bull. t. 348. Eng. Fl. v. p. 78.*

In moist meadows.

Introduced solely on the authority of Sibthorpe. Pileus 3 in. broad, fleshy, when young campanulate, margin sub-sinuate ; gills 4 lines broad, rufescent ; stem 4-5 in. long, 2-3 lines thick, attenuated, of the same colour as the pileus.—*Fries.*

254. *Agaricus (Entoloma) frumentaceus.* Bull. "Mealy Entoloma."

Pileus fleshy, firm, rather brittle, nearly plane, dry, finely streaked ; stem streaked and slightly cracked, obtuse at the base ; gills broad, emarginate, or rounded behind, cinereous, with a reddish yellow tinge.—*Bull. t. 571, f. 1. Ann. N.H. no. 678. Berk. Outl. p. 144.*

On the ground under a hedge. Rare.

Somewhat cæspitose ; pileus $3\frac{1}{2}$ in. across, plane, with the margin arched and sinuated, dry, buff, tinged with red, marked with fine streaks, which are sometimes slightly raised, fleshy, firm, rather brittle ; stem 2 in. high, 1 in. thick, of the same colour as the pileus, streaked and slightly cracked, sometimes compressed, blunt at the base, with a little white down, stained with the spores ; gills broad, moderately distant, sinuated and toothed, rounded behind, sometimes emarginate, adnate, cinereous, with a reddish-yellow tinge ; spores elliptic, minute, .0002 in. long, rose-coloured ; taste agreeable ; smell farinaceous.—*M. J. B.*

Fries places this species in *Tricholoma*, both in the "Epicrisis" and "Monograph." We retain it here in deference to the Rev. M. J. Berkeley's opinion.

255. *Agaricus (Entoloma) ameides.* B. & Br. "Scented Entoloma."

Pileus irregular, broadly campanulate, centre smooth ; margin whitish flocculent, at length glabrous, with a silky lustre, undulated ; stem stuffed, compressed, whitish, villous at the base, above striato-fibrillose, apex flocculent ; gills distant, slightly adnexed, rugose.—*Ann. N. Hist. 1865, no. 999.*

In pastures. Sept. Bodelwyddan, Flintshire.

Pileus 1-2½ in. across, varying from hemispherical in smaller specimens to campanulate, thin, pale reddish grey ; spores rose-coloured, irregular ; large specimens at first sight closely resemble *Hygrophorus ovinus* ; smell peculiar, resembling a mixture of orange flower water and starch. The whole plant acquires a reddish tint in drying.—*B. & Br.*

Sect. 2. Leptonidei—pileus flocculose, sub-squamose, dry.

256. Agaricus (Entoloma) jubatus. *Fr.* "Crested Entoloma."

Pileus fleshy, campanulate, at first acutely, then obscurely umbonate, clothed with fibres, glossy, not hygrophanous, gills slightly adnexed, inclined to ventricose; stem fleshy, glossy, striate, and shining, white at the base, stuffed or hollow, clothed with minute sooty fibres.—*Fr. Epicr. p.* 145. *Fr. S.M. p.* 196. *Trans. Woolhope Club* (1868), *p.* 246, with plate.

In mossy places. Merry Hill Common and Haywood Forest, near Hereford, 1868 (*W.G.S.*), Ascot (*M.J.B.*), near Goudhurst, Sussex (*F.C.*)

Grows in dense clusters. Young specimens acutely campanulate, full grown attain 5 or more in., with a diameter of 3 or 4 in. Spores extremely irregular 00025×0004 in.—*W.G.S.*

257. Agaricus (Entoloma) griseo-cyaneus. *Fr.* "Blue-Grey Entoloma."

Pileus sub-carnose, campanulato-convex, obtuse, floccoso-squamose; stem hollow, floccose or fibrillose, pallid, then bluish; gills adnexed, seceding, whitish, becoming flesh-coloured.—*Fr. Epicr. p.* 145. *B. & Br. Ann. N.H.* (1866) *no.* 1113.

On lawns. Oct. Coed Coch.

With the habit of a *Leptonia*, smaller, soft; stem fibrous, 2-3 lines thick, white when young. Pileus grey, or verging towards lilac.

258. Agaricus (Entoloma) sericellus. *Fr.* "Silky Entoloma."

Pileus rather fleshy, convex, then plane or depressed, silky, at length squamulose; stem sub-fistulose, fibrillose, white, then pallid, gills adnate, seceding, slightly distant, white, then flesh-coloured.—*Fr. Epicr. p.* 146. *Pers. Ic. t.* 6, *f.* 2. *Eng. Fl. v. p.* 76.

In woods. July—Sept.

Sub-gregarious. Pileus $\frac{3}{4}$ in. broad, white, sub-carnose, silky, slightly umbilicate, gills pale rose-colour, broad, adnate, nearly horizontal, sub-decurrent; stem 2 in. high or more, 1 line thick, thickest and downy at the base, sometimes sub-bulbous, solid, or closely stuffed, white, silky. Odour and taste like *A. campestris*.—*M.J.B.*

Sect. 3. Nolanidei—pileus thin, hygrophanous.

259. Agaricus (Entoloma) clypeatus. *L.* "Buckler Entoloma."

Pileus slightly fleshy, campanulate, then expanded, umbonate, smooth, hygrophanous; stem stuffed, attenuated, fibrillose, be-

coming pale; gills rounded, adnexed, seceding, serrulated, dirty flesh colour.—*Fr. Epicr. p. 146. Bull. t. 534. Huss. ii. t. 42. Berk. Outl. t. 7, f. 6. Bolt. t. 69. Buxb. iv. t. 6.*

In gardens, &c.

Pileus 4 in. or more across, gregarious, lurid, when dry grey and rather shining, virgate, and spotted.

260. Agaricus (Entoloma) rhodopolius. *Fr.* "Rosy Entoloma."

Pileus slightly fleshy, campanulate, then expanded, at length slightly depressed, hygrophanous; margin flexuose, broken; stem hollow, nearly equal, smooth, white, pruinose above; gills adnate, sinuate, white, then roseate.—*Fr. Epicr. p. 147. Bolt. t. 6. Fl. Dan. t. 1736. Krombh. t. 55, f. 17-22.*

In woods. Sept.

[Cinninati.]

Pileus about 3 in. across; pileus when young fibrillose, soon smooth, when moist livid or tawny; margin slightly striate, when dry shining, with a satiny lustre. Spores very irregular; average diameter .00027 in.

261. Agaricus (Entoloma) majalis. *Fr.* "Cinnamon Entoloma."

Pileus between fleshy and membranaceous, campanulate or convex, umbonate, even, smooth, hygrophanous; margin expanded, repand; stem fistulose, twisted, striate, whitish, tomentose at the base; gills nearly free, crenate, pallid, then roseate.—*Fr. S. M. p. 205. B. & Br. Ann. N.H. 1865, no. 998.*

In woods. Coed Coch, Denbighshire.

Sub-cæspitose. Pileus cinnamon-colour, when dry ochraceous, 2-3 in. broad. Stem 3-4 in. long, 2-3 lines thick, twisted; gills free, ventricose.

262. Agaricus (Entoloma) costatus. *Fr.* "Costate Entoloma."

Pileus rather membranaceous, convexo-bullate, then nearly plane, sub-umbilicate, undulate, smooth, hygrophanous; stem hollow, short, deformed, sub-striate, grey, whitish-squamulose above; gills nearly free, entire, transversely ribbed, pallid.—*Fr. Epicr. p. 147. Ann. N.H. no. 679.*

In meadows. Oct. Common.

Pileus 2 in. or more, livid, tawny, or with a scorched appearance, shining; stem 2 in. long, 3-4 lines thick. Readily distinguished by the distant broad gills, which are rounded behind, and nearly free, traversed at length by waved ribs, and with their margin undulate, and not discoloured. Smell none; spores irregular, sub-globose, with a globular nucleus.—*M. J. B.*

263. *Agaricus (Entoloma) sericeus.* Bull. "Meadow Entoloma."

Pileus between fleshy and membranaceous, convex, then expanded, smooth, hygrophane, when dry silky; margin inflexed, repand, rather striate; stem fistulose, short, fibrillose; gills emarginate, plane, rather distant, grey.—*Fr. Epicr. p. 147. Bull. t. 413, f. 1. A. pascuus, Eng. Fl. (in part.) Berk. Outl. p. 145.*

In meadows.

Gregarious. Stem hollow, 1-2 in. long, 1-2 lines thick, grey. Pileus 1 in. and more broad, umber, paler when dry, margin at first involute and striate. Odour strong of new meal.

264. *Agaricus (Entoloma) nidorosus.* Fr. "Strong-scented Entoloma."

Pileus between fleshy and membranaceous, convex, then expanded, rather depressed, smooth, hygrophane; when dry silky, shining; stem stuffed, equal, smooth, white, then growing pallid; whitish pruinose above; gills emarginate, free, broad, rather distant, flexuose, pallid flesh-colour.—*Fr. Epicr. p. 148. A. rhodopolius, Eng. Fl. v. p. 76.*

In woods. Common.

Pileus $1\frac{1}{2}$ to 3 in. broad, plano-expanded or sub-depressed, occasionally minutely umbonate, ochraceous, with a brownish tint, the margin sometimes darker and waved, in large specimens sub-carnose, smooth and shining, with a satiny lustre, most minutely silky under a lens, but the silkiness quite adpressed; gills very broad, thick, and adnate, more or less rounded behind, and separating from the stem; stem 2-4 in. high, 2 lines or more thick, hollow and stringy within, sub-flexuose, pulverulent at the apex, downy at the base, minutely fibrillose-striate. Odour strong.—*M. J. B.* Spores somewhat irregular, $\cdot 00034$ in. average length.

Sub-Gen. 14. CLITOPILUS. Fr. Epicr. p. 148.

Spores salmon colour, in some species very pale, almost white, pip-shaped, somewhat irregular spheres, or altogether irregular, as in *Entoloma*, fig. 12; pileus pruinose, dull white, cinereous, or brownish, generally fleshy; stem fleshy or fibrous, confluent with the hymenophore and homogeneous with it; gills decurrent, never sinuated.

HAB. All are terrestrial.—(*Pl. III., fig. 14.*)

With the exception of the gills, most of the characters correspond with *Entoloma*. The odour of the species is more or less mealy, some, however, are oily, some tasteless, others edible. *Clitopilus* is closely allied to *Clitocybe*, and differs from *Entoloma* precisely as *Clitocybe* differs from *Tricholoma*. *Clitopilus* agrees more or less with *Flammula*.—*W. G. S.*

265. Agaricus (Clitopilus) prunulus. Scop. "Plum Clitopilus."

Pileus fleshy, compact, at first convex, regular, at length depressed, repand, pruinose, dry; stem solid, ventricose, naked, striate; gills strongly decurrent, rather distant, white, then flesh-coloured.—*Fr. Epicr. p.* 148. *Trans. Woolh. Cl.* 1869, plate. *Berk. Outl. t.* 7, *f.* 7. *Huss. ii. t.* 47. *Schæff. t.* 78. *Sow. t.* 143. *Hogg & Johnst. t.* 20. *Lenz. t.* 26. *Kromb. t.* 55, *f.* 7-8. *Eng. Fl. v. p.* 76. *Smith E.M. f.* 15.

In woods. June—Oct. Esculent.

[United States.]

Pileus fleshy, compact, at first convex, then expanded, becoming depressed in the centre, irregularly waved, slightly pruinose, 2-5 in. broad, surface dry, soft, white, or sometimes grey, flesh thick, white, unchangeable; stem white, solid, firm, slightly ventricose, 1 in. or more long, $\frac{1}{2}$ in. thick, naked, often striate, and villous at the base; often excentric; gills crowded, deeply decurrent, white, then of a pale, dull, flesh colour, or yellowish brown; spores pale brown, oval, with an apiculus at one end, 00045×0002 in. Odour of new meal, strong.—*H. G. B.*

(*Pl. III., fig. 14, reduced.*)

var. Orcella.—*Trans. Woolh. Cl.* 1869, *fig. Badh. i. t.* 13. *ii. t.* 11, *f.* 1-2. *Vent. t.* 14, *f.* 1-3.

In open places. June—Oct. Esculent.

Pileus thin, irregular, depressed in the centre, lobed, undulated, 2-3 in. broad, clear white, sometimes tinted with pale brown on its prominences, occasionally with a grey centre, or slightly zoned with grey; surface soft and smooth to the touch, except in wet weather, when it becomes soft and sticky; flesh soft, colourless, and unchangeable; stem smooth, white, solid, short, decreasing in size, central when young, becoming excentric from the pileus growing irregularly; gills crowded, decurrent, at first nearly white, then pinkish grey, at length with a light brown tint; spores pale brown, 00035×00018 in.; odour pleasant; smaller than the typical form, less fleshy, and grows in more open glades.—*H. G. B.*

266. Agaricus (Clitopilus) cretatus. Berk. "Chalky Clitopilus."

Small; pileus membranaceous, at length umbilicate, dead-white, shining, margin involute; stem very short, tomentose; gills decurrent, narrow, rosy.—*Ann. N.H. no.* 903.

On naked soil in woods and pastures.

Single or gregarious; pileus $\frac{1}{4}$ – $\frac{3}{4}$ in. across, at first convex, then umbilicate, of a dead white, but shining, membranaceous, not striate, margin involute; stem a few lines high, 1 line thick, often curved at the base, and sometimes thickened, tomentose, especially below, white; gills pale pink, not broad, very decurrent; mycelium white, floccose.—*M. J. B.*

267. Agaricus (Clitopilus) mundulus. Lasch. "Delicate Clitopilus."

Pileus fleshy, thin, tough, plane, then depressed, unequal, unpolished, dry; stem stuffed, thin, flocculose, thickened at either

end, at length black within; gills deeply decurrent, much crowded, narrow, pallid.—*Fr. Epicr. p.* 149. *Batsch.f.* 119. *Batt. t.* 16, *f.* *F.*

In woods. King's Cliffe. Scotland.

Whitish; from 1 in. to 2 in. broad, even or rivulose; stem about 1 in. long, at first floccoso-villose, then becoming smooth.

- 268. *Agaricus (Clitopilus) popinalis.* *Fr.* "Greyish *Clitopilus.*"**

Pileus somewhat fleshy, unequal, sub-repand, flaccid, smooth; stem stuffed, slender, equal, naked, rather flexuous; gills deeply decurrent, crowded, lanceolate, dark grey.—*Fr. Epicr. p.* 149. *B. & Br. Ann. N.H.* (1866) *no.* 1114.

On downs. Oct. Worthing. Near Bath.

A curious species, with a rank and strong odour; the pileus and flesh are of a greyish tint, the gills are strongly decurrent, and the spores pink; probably esculent. Spores irregular spheres, so pale as to be hardly distinguished from white; might easily be referred to *Clitocybe*, diameter '00018 in.

- 269. *Agaricus (Clitopilus) undatus.* *Fr.* "Waved *Clitopilus.*"**

Pileus somewhat fleshy, deeply umbilicate, opaque when dry; stem hollow, short, unequal; gills very decurrent, thin, scarcely crowded, dark, cinereous.—*Epicr. p.* 149. *B. & Br. Ann. N.H.* 1865, *no.* 1000.

In open downs. Oct. Batheaston, &c.

Inodorous; stem soft, attenuated at the base; pileus $1\frac{1}{2}$ in. wide, sooty grey, often infundibuliform and zoned.—*Fries.* Spores brilliant salmon-pink, very irregular, average diameter '00025 in.—*W. G. S.*

- 270. *Agaricus (Clitopilus) cancrinus.* *Fr.* "Flesh-coloured *Clitopilus.*"**

Pileus between fleshy and membranaceous, umbilicate, then convex and expanded, unequal; without striæ, growing pale; stem stuffed, then fistulose, tough, short, smooth, white; gills decurrent, distant, arcuate, white, then pale flesh-colour.—*Fr. Epicr. p.* 150. *B. & Br. Ann. N.H.* (1866), *no.* 1115.

In a grass field. Aug. Apethorpe.

Pileus of a very pale flesh-colour, or whitish, at first umbilicate, gills distant, at first white.

Sub-Gen. 15. CLAUDOPUS. Smith. Seem. Journal.
Pleurotus and Crepidotus. Fr. partly.

Spores pink, or pale lilac; stem lateral or none, when present confluent and homogeneous with the hymenophore; gills sinuate or decurrent.—(*Pl. III., fig. 15.*)

HAB. On wood or the ground.

Claudopus corresponds with *Pleurotus*, only differing in the colour of the spores.—*W. G. S.*

271. Agaricus (Claudopus) euosmus. *Berk.* "Tarragon
Claudopus."

Imbricated, strong-scented. Pileus depressed, shining, and satiny when dry; stem short or obsolete, confluent; gills ventricose, very decurrent, dingy white; spores pinkish.—*Berk. Outl. p. 135. Huss. i. t. 75. Badh. t. 11, partly. Ann. N.H. no. 326.*

On elm posts, stumps, &c. Spring.

Pilei very much crowded, 2 in. or more across, deeply depressed, unequal, at first white, invested with a light blue varnish, at length of a light brown; stem distinct above, connate below; gills rather broad, running down to the bottom of the free portion of the stem. Spores oblong, narrow, oblique, whitish, tinged with purple. The whole plant smells when first gathered strongly of tarragon.—*M. J. B.* (*Plate III., f. 15, reduced.*)

272. Agaricus (Claudopus) variabilis. *P.* "Variable
Claudopus."

Pileus sub-membranaceous, resupinate, then reflexed, silky with white down; gills radiating, rather crowded, white, then rusty-red, at length pale cinnamon.—*Fr. Epicr. p. 211. Pers. Obs. ii. t. 5, f. 12. Sow. t. 97. Bull. t. 152, 581. Fl. Dan. t. 1556. Eng. Fl. v. p. 103.*

On sticks, &c. Common.

[S. Carolina.]

Pileus $\frac{1}{2}$ -1 in. broad, membranaceous, at first hemispherical, with a short stem, soon resupinate, and then again reflexed, the stem becoming quite obsolete, white, covered with silky down; sometimes there is no stem at first, but the pileus is resupinate from the earliest stage of growth. Spores elliptic, rusty-pink.—*M. J. B.* Spores 0002×00013 in.—*W. G. S.*

273. Agaricus (Claudopus) depluens. *Batsch.* "Ground
Claudopus."

Pileus submembranaceous, resupinate, reflexed, somewhat conchate, clothed with white down behind; gills broad, crowded, grey, then reddish.—*Fr. Epicr. p. 212. Batsch. f. 122. Pers. M. E. t. 24, f. 5. Ann. N.H. no. 73.*

On the ground, in stoves, &c. Oct.

[S. Carolina.]

Whitish when dry.

274. Agaricus (Claudopus) byssisedus. P. "Little Claudopus."

Pileus membranaceous, resupinate, then reflexed, nearly plane, pruinose with grey down; stem incurved; gills broad, whitish, then cinereous.—*Fr. Epicr.* p. 212. *Pers. Ic. Desc. t.* 14, f. 4. *Pers. Obs.* ii. t. 5, f. 8, 9. *Ann. N.H.* no. 686.

On the ground. Sept. Rare.

Sometimes with a distinct slender stem. Pileus $\frac{1}{2}$ -1 in. broad, grey; spores angulato-stellate, in this respect resembling the *Hyporhodii*, .0004 in. long, .00028 in. wide.

Sub-Gen. 16. LEPTONIA. *Fr. S.M. i.*, p. 201.

Spores salmon colour, irregular in shape; pileus less campanulate than *Nolanea*, and never truly fleshy, cuticle always torn into scales, disk umbilicate, and often darker than margin, which is at first incurved (B); stem rigid, with a cartilaginous bark, often dark blue, confluent with the hymenophore, but heterogeneous from it; gills not decurrent, but often with a small tooth or sinus, separating from the stem, variable in colour, at first dirty white, yellowish, greenish-grey, or blue.—(*Pl. III.*, f. 16.)

HAB. Dry hills, and sometimes marshy places, in July and August.

Most of the species grow in clusters, are small, and of an elegant colour; most common in rainy seasons. Structurally the same as *Collybia*, and bears the same relationship to *Clitopilus* as *Collybia* to *Clitocybe*.—*W. G. S.*

The small sketch, showing incurved margin of pileus, is *A. (Leptonia) chalybeus*, P.

275. Agaricus (Leptonia) lampropus. *Fr.* "Mouse-coloured Leptonia."

Pileus rather fleshy, obtuse, convex, then plane, not striate, at length depressed, squamulose, broken up into flocci; stem sub-fistulose, even, unspotted, steel-violet; gills adnate, ventricose, whitish.—*Fr. Epicr.* p. 152. *Bull. t.* 521, f. 1. *Ann. N.H.* no. 145.

In pastures.

Pileus $1\frac{1}{2}$ in. across, opaque, not umbilicate, nor papillate, from mouse-colour to steel-grey.

276. Agaricus (Leptonia) serrulatus. P. Saw-gilled Leptonia."

Pileus between fleshy and membranaceous, hemispherical, then expanded, umbilicate, sub-squamose; stem fistulose, smooth, dotted above, black; gills adnate, seceding, broad, bluish, then

greyish, flesh coloured, edge black, serrulated.—*Fr. Epicr. p. 153. Hotms. ii. t. 38. Bull. t. 413, f. 1. Ann. N.H. no. 146.*

In woods. Rare. Wothorpe.

Remarkable for its black margined, serrated gills; stem black, steel blue, glaucous, or grey. Pileus at first blackish blue.

277. *Agaricus (Leptonia) euchrous.* P. "Violet Leptonia."

Pileus rather fleshy, campanulate, then convex, obtuse, squamulose, or fibrillose; stem stuffed, smooth, violet; gills adnexed, ventricose, violet; edge darker, entire.—*Fr. Epicr. p. 153. Pers. Syn. p. 343. Ann. N.H. no. 791.*

On alder trunks.

Pileus violet, scarcely an inch broad; stem about $1\frac{1}{2}$ in. long, 1 line thick, tough. The habitat as well as structure of this species is analogous with certain species of *Collybia*.

278. *Agaricus (Leptonia) chalybæus.* P. "Steel-blue Leptonia."

Pileus rather fleshy, convex, sub-umbonate, without striæ, at first flocculose, then squamulose; stem stuffed, smooth, blue; gills emarginate, adnexed, broad, ventricose, glaucous, dirty white, edge darker.—*Fr. Epicr. p. 153. Sow. t. 161. Krombh. t. 2. f. 11, 16. Eng. Fl. v. p. 80.*

In pastures. July—Sept.

Pileus $\frac{1}{2}$ -1 in. broad, convex, minutely umbonate, scaly, dark blue, or almost black, sub-carnose, slightly striate on the margin, flesh dark blue; gills at first pale, then clouded lightly, of the colour of the pileus. Stem $1\frac{1}{2}$ in. high, 1 line thick, stuffed, at length hollow, indigo without, dark within, nearly smooth above, downy at the base. Spores rose-coloured, elliptic, with a globular nucleus.—*M. J. B.*
(*Pl. III., f. 16, small fig.*)

279. *Agaricus (Leptonia) incanus.* Fr. "Hoary Leptonia."

Pileus submembranaceous, convexo-plane, umbilicate, smooth, with a silky lustre, or virgate, margin striate; stem fistulose, shining, smooth, brownish-green; gills adnate, seceding, broad, somewhat distant, white, then greenish.—*Fr. Epicr. p. 154. Sow. t. 162. A. Sowerbei. Eng. Fl. v. p. 82.*

In pastures.

Smell like that of mice; gregarious; pileus about 1 in. broad, variegated brown and greenish; stem 1-2 in. long, greenish or greenish brown. Spores very irregular, dull-yellowish, pink, average diameter $\cdot 00034$ in.

(*Pl. III., f. 16, reduced.*)



280. Agaricus (Leptonia) asprellus. *Fr.* ^{Rough Leptonia}

Pileus somewhat membranaceous, convex, then expanded, striate, hygrophanous, with a darker umbilicus, squamuloso-fibrillose; stem fistulose, slender, smooth; gills adnate, seceding, rather distant, equally attenuated, whitish grey.—*Fr. Epicr. p. 154. Berk. Outl. p. 147.*

In open pastures. Bristol. Wansford.

Pileus at first dingy or mouse colour, soon plane and livid grey, usually smooth, except in the centre, 1-1½ in. broad; stem 1-2 in. long, scarcely 1 lin. thick, even, smooth, livid, greenish, or light blue.

Sub-Gen. 17. NOLANEA. *Fr. S. M. i. p. 204.*

Spores salmon colour; pileus submembranaceous (as in *Leptonia* and *Eccilia*), sub-campanulate, and papillose, not umbilicate, at first straight and pressed to the stem, not incurved as in *Leptonia*; stem cartilaginous, fistulose, sometimes stuffed, confluent with but heterogeneous from the hymenophore; gills not decurrent.

HAB. Generally terrestrial, growing on grassy hills, and in wet places in woods.—*Pl. III., fig. 17.*

The species are thin, slender, inodorous, and brittle (but some very tenacious), growing in summer and autumn. *Nolanea* corresponds with *Mycena*, *Galera*, *Psathyra*, and *Psathyrella*.—*W. G. S.*

281. Agaricus (Nolanea) pascuus. *P.* "Pasture *Nolanea*."

Pileus membranaceous, conical, then expanded, sub-umbonate, smooth, striate, hygrophanous, when dry shining like silk; stem fistulose, fragile, silky fibrous, striate; gills attenuated behind, nearly free, ventricose, crowded, dirty greyish.—*Fr. Epicr. p. 155. Schæff. t. 229. Buxb. iv. t. 21, f. 1. Batt. t. 25, E. Bolt. t. 35. Eng. Fl. v. p. 81, partly.*

In pastures. Inodorous.

[United States.]

Stem soft, 2-3 in. long, 1-2 lin. thick, striate; pileus 2-3 in. broad, sometimes scarcely exceeding 1 in., dingy when moist, when dry hoary or pale fawn-colour. Spores irregular, rounded, pentagonal, hexagonal, &c., diameter from .0003 to .00042 in.

(*Pl. III., f. 17, reduced.*)

282. Agaricus (Nolanea) rufo-carneus. *Berk.* "Red-brown *Nolanea*."

Pileus submembranaceous, hemispherical, umbilicate, indistinctly fibrilloso-squamulose, red brown; margin striate; stem elongated, pale rufous, rather incrassated at the base; gills ad-

nate, ventricose, attenuated behind, slightly connected and traversed by veins.—*Eng. Fl.* v. p. 2, p. 82. *Berk. Outl.* p. 148.

On heaths. Sept.

Pileus 1 in. broad, umbilicate, membranaceous, indistinctly fibrillose-squamulose, margin striate, dark red brown; gills adnate, ventricose, wavy, rose-coloured, slightly connected and traversed by veins; stem $2\frac{1}{2}$ in. high, 1 line thick, curved at the base, where it is slightly thickened, pale rufescent, nearly white above, fistulose, smooth, under a lens minutely fibrillose; taste rather bitter.—*M.J.B.*

283. *Agaricus (Nolanea) rubidus.* Berk. "Ruddy Nolanea."

Pileus membranaceous, convex, at length umbilicate, finely silky; stem short, thickest above, solid, minutely silky; gills ventricose, adnate, attenuated behind, sometimes sub-decurrent, whitish, then rose-coloured.—*Mag. Zool. & Bot.* i. t. 2, f. 2. *Berk. Outl.* p. 155.

In stoves. March. Milton, Norths.

Pileus $\frac{1}{2}$ in. across, convex, at length umbilicate, margin sometimes slightly wavy, membranaceous, finely silky, white or greyish, acquiring at length a pale, ruddy tinge; gills broad, ventricose, adnate, with frequently a more or less distinct tooth, sometimes at length decurrent, rose-coloured, as well as the elliptic spores; stem $1\frac{1}{2}$ -2 lines high, thickest above, white or greyish like the pileus, solid, minutely silky; smell like new flour.—*M.J.B.* Spores 00018×00015 in.

284. *Agaricus (Nolanea) Babingtonii.* Blov. "Babington's Nolanea."

Pileus conico-campanulate, cinereous, shining like silk, adorned with dark brown sub-fasciculate fibres, which are free at one end; stem equal, fistulose, clothed with dark brown down, sub-strigose; gills ventricose, distant, cinereous, darker at the base, adnate, glittering with little points.—*Ann. Nat. Hist.* xiii. Ser. 2, p. 400, pl. xv. f. 1, no. 903*.

Rare. Twycross. Collyweston. [Pennsylvania, U. S.]

Pileus scarcely $\frac{1}{2}$ in. across, conico-campanulate, cinereous, shining, with dark-brown silky sub-fasciculate hairs, the ends of which are free, disc sub-squamulose, margin straight; stem about 1 in. high, not 1 lin. thick, equal, fistulose, spadiceo-tomentose, sub-strigose; gills ventricose, distant, cinereous, darker behind, adnate, glittering; spores oblong, ventricose on the outer side, rather irregular, sometimes with a distinct septum.—*M.J.B.*

285. *Agaricus (Nolanea) junceus.* Fr. "Rush-stemmed Nolanea."

Pileus membranaceous, conical, then expanded, radiato-striate, shining, hygrophanous, disc umbilicate, sub-squamulose; stem fistulose, slender, smooth, brown; gills adnexed, seceding, as-

cending, obovate, somewhat distant, grey-brown, then purplish.
—*Fr. Ep. p.* 156. *B. & Br. Ann. N.H.* (1866), *no.* 1116.

In a wood. Oct. Caernarvonshire.

Stem slender, 3 in. long, smooth, brown, then livid-brown. Pileus very obtuse, about 1 in. broad, dingy when fresh, livid when dry.

Sub-Gen. 18. *ECCILIA.* *Fr. S. M., i. p.* 207.

Spores salmon-colour; pileus generally umbilicate, disc homogeneous, margin at first incurved, as in *Leptonia*; stem hollow, confluent with but heterogeneous from the hymenophore; gills truly decurrent.—(*Pl. III., fig.* 18.)

Corresponds with *Omphalia*. The species figured is *Agaricus (Eccilia) Parkensis*, *Fr.*, for specimens of which I am indebted to Mr. C. E. Broome. Average size of spores .00027 in.—*W. G. S.*

286. *Agaricus (Eccilia) carneo-griseus.* *B. & Br.* “Flesh-grey *Eccilia*.”

Pileus umbilicate, greyish-flesh colour, finely striate, margin darkened with micaceous particles; stem slender, shining, smooth, of the same colour, whitish tomentose at the base, hollow upwards; gills distant, adnato-decurrent, sub-undulate, rosy, margin irregularly darkened.—*B. & Br. Ann. N.H.* (1865), *no.* 1001, *pl.* xiii. *fig.* 1.

Amongst fir leaves. Aug. Aboyne, Aberdeenshire.

Spores irregular, rose-coloured. Its closest ally is *A. atrides*, from which it differs in the smooth stem, delicate colour, &c.—*B. & Br.*

287. *Agaricus (Eccilia) Parkensis.* *Fr.* “Umbilicate *Eccilia*.”

Pileus membranaceous, plano-convex, strongly umbilicate, quite smooth, brown when moist, blackish when dry; stem fistulose, short, attenuated downwards, smooth, brown; gills decurrent, crowded, whitish, then dingy flesh colour.—*Fr. Monogr. p.* 301.

In grassy places. Elmhurst.

Pileus scarcely an inch broad, striate to the middle, not hygrophanous; stem short, scarcely 1 in. (*Pl. III., fig.* 18.)

288. *Agaricus (Eccilia) rhodocylix.* *Lasch.* “Roseate *Eccilia*.”

Pileus membranaceous, rugulose, floccose, soft, umbilicate, then infundibuliform; stem stuffed, slender, incurved, even, smooth; gills strongly decurrent, distant, thick, whitish.—*Ann. Nat. Hist.* *no.* 904. *Fr. Epicr. p.* 160.

On rotten wood.

Stem stuffed, scarcely an inch long, $\frac{1}{2}$ line thick, cinereous. Pileus $\frac{1}{2}$ in. broad, hygrophanous, when moist remotely striate and brownish, when dry flocculose and grey. Just the habit of *A. umbelliferus*, its analogue amongst the *Leucospori*.

Series III. *Dermini*, Fr. Epicr. p. 160.

Spores various shades of reddish-brown, brown, red, or yellowish-brown.

In the *Dermini* there are no species with the hymenophore free from the stem, neither are any furnished with a volva, unless, indeed, a trace of such species is indicated in the genus *Cortinarius* (for *Cortinarius* is certainly allied to *Pholiota* and *Hebeloma*), where many of the species have an adnate volva and arachnoid ring.—*W. G. S.*

Sub-Gen. 19. *PHOLIOTA*. Fr. S. M. i. p. 240. (*fig.* 19.)

Spores sepia-brown, bright yellowish-brown, or light red; stem confluent and homogeneous with the hymenophore, furnished with a ring, persistent, friable, fugacious.

HAB. All the British species grow on stumps except five, which grow on the ground, principally in damp, mossy places.—(*Pl. IV.*, *fig.* 19.)

A few species are said to be edible, but they cannot be recommended. *Pholiota* is analogous to *Armillaria* and *Stropharia*. There is some danger of confusing *Pholiota* with *Cortinarii*, but attention must be paid to the spidery veil and the *rust-of-iron* tint of the spores in the latter.—*W. G. S.*

A. *Humigenei*—Terrestrial.

289. *Agaricus (Pholiota) durus*. Bolt. "Hard *Pholiota*."

Pileus sub-compact, convexo-plane, smooth, at length cracked; margin even; stem stuffed, hard, externally fibrous, rather thickened upwards and mealy; ring slightly torn; gills adnate (often with a tooth), ventricose, livid, then of a brown rust colour.—*Fr. Epicr. p.* 162. *Bolt. t.* 67, *f.* 1. *Krombh. t.* 28, *f.* 14, 22. *Ann. N. H. No.* 327.

In gardens.

[*Cincinnati*.]

Pileus pale, tawny, or brownish tan, 3 in. or more broad, stem usually short, about $\frac{1}{2}$ an in. thick; spores $\cdot 00035 \times \cdot 00024$ in.

290. Agaricus (Pholiota) præcox. *P.* "Spring Pholiota."

Pileus fleshy, soft, convexo-plane, obtuse, at length smooth, even; stem stuffed, then hollow, cylindrical, pubescent or mealy, at length smooth, white as well as the ring; gills emarginate, adnexed, crowded, white, then brownish.—*Fr. Epicr. p.* 162. *Schæff. t.* 217. *Berk. Outl. t.* 8 *f.* 1. *Eng. Fl. v. p.* 107. *Krombh. t.* 55, *f.* 11-16. *Letell. t.* 608.

In gardens and pastures. Spring. [United States.]

Pileus about 2 in. across, very fleshy, flesh firm, white or pale buff, watery near the gills, cuticle when moist subviscid, when dry resembling white kid leather, retaining the impression of the fingers, somewhat tessellated, yellowish or pale tawny. Gills adnexed or subadnate, moderately broad, not ventricose, slightly hollowed out behind with a sub-decurrent tooth, pale brownish purple, edge white or yellowish; stem $1\frac{1}{2}$ -3 in. high, 2-3 lines thick, sub-flexuous, equal or sub-bulbous, solid, but sometimes decidedly hollow, juicy, white, or faintly shaded with buff, fibrillose, under a lens sub-pubescent, ring near the top deflexed and striate, or attached in fragments to the edge of the pileus; root strong, white, branched.—*M. J. B.* Spores 00031×0002 , sometimes inclined to be irregular in shape as in some *Hyporhodium*.

B. Truncigenae—on wood, sub-cæspitose.

291. Agaricus (Pholiota) radicosus. *Bull.* "Rooting Pholiota."

Pileus not seen, often cracked gills at first pallid then suffused or fuscous
Pileus fleshy, equal, obtuse, even, smooth, spotted; stem solid, rooting; above the distant ring mealy, below concentrically squamulose; gills free, ventricose, pallid, then reddish brown. *Fr. Epicr. p.* 163. *Bull. t.* 160. *Krombh. t.* 62 *f.* 6-10. *Eng. Fl. v. p.* 90.

In woods.

Pileus 3 in. or more broad, convex, fleshy, the whole covered at first with a slimy web which leaves behind broad adpressed scales on the stem and pileus, besides these there are many fine close silky scales, pallid ochre, margin downy, involute; gills incarnato-ferruginous, pale, adnate, nearly horizontal, minutely serrulate; stem 4 in. high, 1 in. thick, deeply rooting, firm, solid, white within, ring thick, sub-erect, beneath the slimy coat silky and furfuraceous, above the ring pruinose. Odour of prussic acid; taste soon disagreeable.—*M. J. B.* Spores 00034×00017 in., oval, with an apiculus at one end, somewhat irregular in shape.

292. Agaricus (Pholiota) pudicus. *Bull.* "Modest Pholiota."

Pileus fleshy, convex, then expanded, obtuse, even, dry, smooth; stem solid, sub-equal, even; ring spreading, persistent; gills rounded behind, adnate, ventricose, whitish, then tawny.—*Fr. Epicr. p.* 164. *Bull. t.* 597, *f.* 2. *R. S. and L. O. Huss. ii. t.* 31. *Batt. t.* 8, *A. Letell. t.* 664.

On elder trunks, &c., and on the ground. Esulent.

Pileus sometimes rivulose, dirty white, simple, or cæspitose. Stem excentric, curved at the base; spores $\cdot 0002 \times \cdot 00032$ in.

293. Agaricus (Pholiota) leochromus. Cooke. "Tawny Pholiota."

Pileus fleshy, convexo-plane, at length depressed, soft, smooth, not shining; stem solid, nearly equal, even; ring persistent, tawny; gills rounded, adnate, slightly ventricose, pallid, then cinnamon-coloured; spores profuse.—*Seem. Journ. Bot. No. 3* (1863), t. 3, f. 3. *Ann. N. H.* 1865.

On stumps, &c. Esulent.

Cæspitose; pileus 2-3 in., bright tawny, paler (whitish) at the margin, generally rivulose from the cracking of the cuticle; stem 3-4 in., slender, solid, fibrous, internally amber-brown at the base, externally paler, white above, nearly equal, smooth, shining. Allied to *A. pudicus* and *A. capistratus*, but differing in habit and structure from both. Found at Millfield-lane, Highgate, plentifully in the autumn of 1862 and 1863. Since met with by W. G. Smith in other localities. (*Pl. I., fig. 2.*)

294. Agaricus (Pholiota) capistratus. Cooke. "Ruffed Pholiota."

Pileus fleshy, convex, somewhat viscid, margin involute, slightly striate; stem nearly equal, stuffed, thick, subsquamulose; ring spreading, persistent; gills decurrent, pallid, growing darker.—*Seem. Journ. Bot. No. 3* (1863), t. 3, f. 4. *Ann. Nat. Hist.* (1865.)

On old stumps, elm, &c. Highgate.

Subcæspitose. Pileus 2-3 in., livid, tawny, rather viscid when moist, whitish when dry, margin folded inwards and obscurely striate; stem 3-4 in. thick, nearly equal; ring large and entire, spreading, and persistent; gills rather fleshy, crowded, decurrent, pallid. Taste rather unpleasant. Distinguished from *A. pudicus* and *A. cylindræus* by its decurrent gills, its more robust habit, and the folding in of the margin of the pileus. (*Pl. I fig. 1.*) This species is stated to be edible by Mr. J. A. Clark, who found it at Street, Somerset; Mr. W. G. Smith, who has found it in several places, says the spores are the same in size and colour as the last.

295. Agaricus (Pholiota) heteroclitus. Fr. "Bulbous-stemmed Pholiota."

Compact. Pileus plano-convex, then expanded, very obtuse, rather excentric, marked with scattered, innate, adpressed scales; stem solid, short, bulbous at the base, fibrillose, white; gills rounded, adnexed, very broad, at first pallid, then ferruginous.—*Fr. Epicr. p.* 165. *Gard. Chron.* 1868, p. 1113.

On poplar. Bromley.

Odour strong and pungent. Pileus whitish or yellowish, broken up into scales, sometimes smooth if dry, viscid when moist, disc plano-truncate; stem within at the base of a rhubarb colour, ring fugacious, appendiculate.

296. Agaricus (Pholiota) comosus. *Fr.* "Hairy Pholiota."

Pileus fleshy, convex, obtuse, viscid, sprinkled with evanescent, superficial, floccose scales; stem solid, slightly bulbous, white, as well as the evanescent, floccose ring; gills rather decurrent, quite entire, white, becoming of a brownish clay colour.—*Fr. Epicr. p. 165. Bolt. t. 42.*

On trunks.

Pileus 3 in. broad, brownish, with the scales paler. Flesh compact, white.

297. Agaricus (Pholiota) squarrosus. *Müll.* "Scaly Pholiota."

Pileus fleshy, campanulate, convex, then expanded, dry; stem stuffed, attenuated at the base, squarrose, as well as the pileus, with crowded darker, innate, revolute scales; gills sub-decurrent, crowded, narrow, pallid, olivaceous, then ferruginous.—*Fr. Epicr. p. 166. Bull. t. 266. Schæff. t. 61. Sow. t. 284. Grev. t. 2. Huss. i. t. 8. Eng. Fl. v. p. 91. var. Mulleri. Saund. & Sm. t. 18, f. 1.*

On trunks of trees. Common.

[S. Carolina.]

Cæspitose. Pileus 2-5 in. across, firm, convex, expanded, obtusely umbonate, tawny-yellow, clothed with rich brown scales, flesh yellow near the surface; gills at first yellowish, then pale-olive, changing to ferruginous, broad, rounded behind, and adnate or sub-decurrent. Stem 3-7 in. high, $\frac{1}{2}$ -1 in. thick, at first pale, then croceo-ferruginous, solid, pithy in the centre, equal, or attenuated at the base from the tufted mode of growth, fibrillose and squarrose, with reflexed scales, above the ring very pale yellow and smooth. Ring near the apex, radiato-floccose, rich brown, inclining to orange. Odour disagreeable.—*M. J. B. Spores .00022 × .00017 in. (Pl. IV., fig. 19.)*

298. Agaricus (Pholiota) aurivellus. *Batsch.* "Golden Pholiota."

Pileus fleshy, campanulate, then convex, gibbous, slightly viscid, variegated with darker, adpressed scales; stem stuffed, nearly equal, curved, clad with scattered, adpressed, floccose, ferruginous-brown scales; ring rather distant; gills sinuated behind, fixed, white, straw-coloured, then ferruginous-umber.—*Fr. Epicr. p. 165. Fl. Boruss. t. 386. Batsch. f. 115. Fl. Dan. t. 2074. Eng. Fl. v. p. 91. Ann. N.H. no. 680*. Saund. & Sm. t. 9.*

On trunks of trees. Rare.

[S. Carolina.]

Generally solitary. Pileus tawny, 3 in. across, when young hemispherical, at length expanded; gills fixed, very broad, plane, pallid olive, at length ferruginous; stem hard, abrupt, various in length, incurved, sub-bulbous, whitish, within rhubarb-coloured at the base, veiled at the very apex.—*Fries.*

299. Agaricus (Pholiota) adiposus. *Fr.* "Pine-apple Pholiota."

Pileus compact, convex, then plane, obtuse, glutinous; stem stuffed, somewhat bulbous, yellow, squarrose as well as the pileus with superficial, evanescent, darker, concentric scales; gills adnate, broad, yellow, then ferruginous.—*Fr. Epicr. p. 166. Berk. Outl. t. 8, f. 2. Fl. Dan. t. 2078. Krombh. t. 3, f. 1. Batsch. f. 31. Eng. Fl. v. p. 91.*

On beech and ash trunks.

[Cinnamati.]

Extremely beautiful, growing in large tufts, coloured like a ripe pine-apple. Pileus convex, firm, fleshy, margin thin, of a beautiful tawny, very viscid, smooth and shining, with a few superficial darker scales; remains of the woven ring attached to the margin. Gills broad, rounded behind, and adnate with a tooth, ferruginous, edge white. Stem equal, scarcely thickened at the base, solid, firm, brown below, yellowish above, with tawny, adpressed scales, near the apex whiter and more silky.—*M. J. B.* Spores $\cdot 00029 \times \cdot 00021$ in.

300. Agaricus (Pholiota) spectabilis. *Fr.* "Orange Pholiota."

Pileus compact, convex, then plane, dry, cuticle torn into fibrous or silky scales; stem solid, ventricose, somewhat rooting; gills adnato-decurrent, crowded, narrow, yellow, then ferruginous.—*Fr. Epicr. p. 166. Bull. t. 92. Krombh. t. 3, f. 3. Ann. N. H. no. 904*. Sow. t. 77. Huss. i. t. 71. A. aureus, Eng. Fl. v. p. 90. Berk. Outl. p. 140.*

On dead stumps.

Subcæspitose. Pileus 4 in. or more broad, convexo-expanded, rich tawny, with broad, adpressed, silky scales in the centre, which towards the margin become mere streaks, fleshy; flesh pale yellow; gills at length tawny ferruginous, adnexed, rounded behind, or decurrent; stem 4 in. high, 1 in. or more thick, solid, tough, and spongy, the centre a little looser, thickened downwards and bulbous, with a small (sometimes rather large) deflexed, rather thick ring near the top, which is densely powdered with the spores, under the gills minutely squamulose, below fibrillose, the fibrillæ close, paler than the pileus, rhubarb-coloured within; root a few downy fibres; taste bitter.—*M. J. B.* Spores $\cdot 0003 \times \cdot 0002$ in.

301. Agaricus (Pholiota) flammans. *Fr.* "Yellow scaly Pholiota."

Pileus fleshy, convex, then plane, somewhat umbonate, dry, clothed with superficial, hairy, paler scales; stem stuffed, then hollow, equal, rather flexuose, squamoso-squarrose, ring entire, yellow, as well as the fixed, crowded, quite entire gills.—*Fr. Epicr. p. 167. Eng. Fl. v. p. 92.*

In pine woods. Sept. Oct.

Taste bitter. Pileus $1\frac{1}{2}$ -3 in. broad, margin at first inflexed, then repand, scales concentric, yellow, scarcely innate; gills rather thin, close, adnate, without a tooth, at length ferruginous; stem 3 in. high, 2-3 lines thick, stuffed, at length hollow, yellow; ring entire, close to the gills.—*Fries*.

302. *Agaricus (Pholiota) Junonius.* Fr. "Beautiful Pholiota."

Pileus fleshy, convexo-plane, obtuse, when dry smooth; stem solid, equal, incurved, even, furfuraceous above the ring; gills adnate, crowded, yellow, then tawny.—*Fr. Epicr. p. 167. Sv. Bot. t. 584. Saund. & Sm. t. 18, f. 2.*

On trunks. Oct. Highgate.—*M.C.C.*

Single, or in small tufts, of a beautiful deep brownish-orange, minutely fibrillose when moist, smooth when dry; gills at first yellow, then of a deep cinnamon-brown; spores nearly ferruginous. *Fries*, to whom a drawing of our specimens was submitted, refers them without doubt to this species, which he describes as rare everywhere. Spores oval, or with an apiculus at one end, $\cdot 00027 \times \cdot 00017$ in.

303. *Agaricus (Pholiota) mutabilis.* Schæff. "Changeable Pholiota."

Pileus fleshy, convex, then expanded, smooth, becoming pale; margin thin; stem stuffed, then hollow, rigid, rough with scales, dark-brown at the base; gills adnato-decurrent, crowded, pallid, then cinnamon colour.—*Fr. Epicr. p. 169. Schæff. t. 9. Lenz. f. 20. Krombh. t. 73, f. 7-9a. Bull. t. 543, O.P.R. Badh. i. t. 16, f. 4a. Gonn. & Rabh. iv. t. 6. Price, f. 123. Berk. Outl. t. 8, f. 3. Eng. Fl. v. p. 92. Huss. ii. t. 27.*

On trunks, especially lime stumps, or on the ground. Esculent.
[United States.]

Cæspitose. Pileus expanded, obtuse, cinnamon, becoming pale when dry; centre of the pileus at length bright tawny, quite smooth, the margin thin transparent, flesh white; gills broad, rounded behind, or sub-decurrent, pale umber; stem slender, fistulose, dark-brown, smooth above, or minutely pulverulent, and pale, below squamulose, ring woven, sub-erect.—*M. J. B.* Spores $\cdot 00045 \times \cdot 00025$ in.

304. *Agaricus (Pholiota) marginatus.* Batsch. "Marginate Pholiota."

Pileus rather fleshy, convex, then expanded, smooth, moist, hygrophanous; margin striate; stem fistulose, soft, not scaly, pruinose above the fugacious ring, base darker, clothed with whitish velvety down; gills adnate, crowded, watery-cinnamon coloured.—*Fr. Epicr. p. 168. Batsch. f. 207 (208 var.) Krombh. t. 73, f. 5-6.*

On the ground amongst firs.

Solitary or gregarious, rarely caespitose. Stem about 2 in. long, 1-2 lines thick; pileus when moist honey-coloured, when dry tan-coloured, ring 1-2 lines distant from the apex of the stem.

C. *Muscigenaei*—growing on moss, &c.

305. *Agaricus (Pholiota) pumilus.* Fr. "Little *Pholiota*."

Pileus somewhat fleshy, hemispherical, obtuse, even; stem fistulose, slender, sub-fibrillose; ring collar-like, rather fugacious; gills adnate, crowded, broad, pallid-yellowish.—*Fr. Epicr. p. 170.*

In woods. October. Rare.

Pileus only a few lines broad, yellowish; stem 1-1½ in. long; 1-1½ line thick.

306. *Agaricus (Pholiota) mycenoides.* Fr. "Delicate *Pholiota*."

Pileus membranaceous, campanulate, then convex, deeply striate, hygrophanous; stem fistulose, slender, ferruginous, smooth as well as the pileus; ring membranaceous, white; gills adnate, rather distant, ferruginous.—*Fr. Epicr. p. 170. A. mesodactylus. B. & Br. Ann. N.H. Ser. 2, ii. p. 261, t. 9, f. 1, p. 400, no. 681.*

On the ground, in damp dells. Oct. Rare.

"My plant has a white stem, but Fries considers it the same with his *A. mycenoides*. Pileus 1½ in. broad, obtusely conical, with the margin expanded, hygrophanous, pale tawny, slightly fleshy in the centre, margin striate; stem flexuous, 2½ in. high, 2 lines thick, white, nearly smooth above and below the ring, sometimes showing a vinous stain where bruised, nearly equal, fistulose. Ring central, expanded, quite entire, deeply striate within; gills moderately broad, slightly ventricose, ascending, affixed."—*M. J. B.*

307. *Agaricus (Pholiota) Leveillianus.* D. & M. "Leveille's *Pholiota*."

Hard, fleshy, thin, convex, umbonate, clothed with a glutinous, dark brown, opaque pellicle, at length wrinkled, and paler when dry; stem hollow, nearly equal, fibrilloso-squamose below the ring, white, with a reddish tinge; gills broad, adnate, decurrent, white, then pink, at length rufous.—*Berk. Outl. p. 152. A. jecorinus. B. & Br. Ann. N.H. Ser. 2, ii. p. 260, no. 328.*

On soil about beech trees. Aug. Rushton, Norths.

Fasciculate or gregarious. About 1½-2 in. across, hemispherical, at length expanded, quite smooth and even, at first clothed with a viscid pellicle, at length slightly wrinkled, somewhat fleshy, dark brown, paler when dry; stem 2½ in. high, ¼ in. thick, incrassated, below umber, dark brown at the base, fibrillose, stuffed, at length hollow. Ring near the top persistent,

mostly deflexed; stem above the ring paler, fibrillose; gills umber, with a rosy tinge, adnate, with a decurrent tooth, rather distant; spores brownish.—*M. J. B.* Allied to *A. pudicus*, &c., but distinct in its very dark head, and umber adnato-decurrent gills. Taste like that of the common mushroom, with a slight acidity.

Sub-Gen. 20. HEBELOMA. Fr. S. M. i. p. 249.

(Including *Inocybe*. *Fr. Mon. Hym.*)

Spores for the most part clay-coloured, or in *Inocybe* ferruginous brown; veil of a different texture from the pellicle of the pileus, or in *Inocybe* homogeneous with the fibres of the pileus; pileus fleshy, pelliculose, damp, subviscid, or (in *Inocybe*) fibrous; stem confluent and homogeneous with the hymenophore, fleshy-fibrous, ringless; gills sinuato-adnate.

HAB. All terrestrial. (*Pl. IV., f. 20.*)

All the species are gregarious, and many so similar in appearance as to be with difficulty distinguished from each other. Some are scentless, several smell like rotten pears, and many have a disgusting odour and are poisonous; none are esculent. Fries, in his '*Monographia Hymenomycetum Sueciæ*,' has introduced a new sub-genus after *Hebeloma*, which he names *Inocybe*, distinguished by the pileus being *silky-fibrous*, and having a few other unimportant characters; but such characters seeming insufficient, we have preferred to adhere to the views expressed in the '*Epicrisis*,' and to retain *Inocybe* as a section of *Hebeloma*.—*W. G. S.*

A. HYMENOCYBE.

Sect. 1. Veiled, odour mild.

308. *Agaricus (Hebeloma) punctatus.* *Fr.* "Punctate *Hebeloma*."

Pileus fleshy, nearly plane, silky, becoming smooth, disc dotted with darker papillæ; stem hollow, equal, fibrillose, silky, growing pale, whitish-pruinose above; gills arcuate, fixed, narrow, pallid, ferruginous, or bay-coloured.—*Fr. Epicr. p. 179. Ann. Nat. Hist. no. 906.*

In pine woods. Sept. Near Gainsborough.

Pileus 1-2 in. broad, at first convex, soon becoming flattened, disc obtuse and swollen, umber about the centre, at length depressed; stem 2-4 in. high, 2-4 lines thick.

309. *Agaricus (Hebeloma) versipellis.* *Fr.* "Changeable *Hebeloma*."

Pileus fleshy, convexo-plane, disc viscid, with a tenacious gluten, beyond this silky-agglutinate, then smooth; stem fistulose, tough, whitish and silky, pruinose above; gills rounded,

crowded, broad, whitish, flesh-coloured, then clay-coloured.—*Fr. Epicr. p. 179. Ann. N.H. no. 907.*

In grassy places, amongst fir leaves.

Silky, with an evanescent fibrillose veil, stem fibrilloso-striate, brownish internally; pileus thin, sub-punctate, regular, at length repand, dry, tan-coloured and opaque; odour faint, not unpleasant.

310. Agaricus (Hebeloma) mesophæus. Pers. “Pine Hebeloma.”

Pileus rather fleshy, conical, convex, then plane, equal, even, with a viscid disc; stem sub-fistulose, equal, slender, fibrillose, white, then ferruginous, pruinose above; gills emarginate, crowded, thin, clay-coloured or ferruginous.—*Fr. Epicr. p. 179. Ann. N.H. no. 908.*

In pine woods.

Stem tough, 2-3 in. long, 2 lines thick, veil fugacious; pileus about 1 in., ash-coloured or pallid, rarely fibrillose at the margin; gills entire, and of one colour.

Sect. 2. Odour nauseous.

311. Agaricus (Hebeloma) sinapizans. Fr. “Clayey Hebeloma.”

Pileus compact, convexo-plane, sub-repand, even, smooth, slightly viscid, stem nearly solid, stout, equal, fibrilloso-striate, whitish, apex squamose; gills deeply emarginate, broad, dry, crowded, quite entire, clay-coloured cinnamon.—*Fr. Epicr. p. 180. Paul. t. 82. Saund. & Sm. t. 2.*

In moist woods.

Pileus clay-coloured or grey, 3-5 in. or more broad; flesh white; stem 3-5 in. long, 1 in. thick.

312. Agaricus (Hebeloma) crustuliniformis. Bull. “Ring Hebeloma.”

Pileus fleshy, convexo-plane, sub-repand, smooth, slightly viscid, stem stuffed, firm, rather bulbous, flocculoso-squamose, whitish; gills adnexed, crowded, thin, whitish, then watery cinnamon; edge crenulate, guttate.—*Fr. Epicr. p. 180. Bull. t. 308, 546. Batsch. f. 195. Batt. t. 47. Paul. t. 52. Berk. Outl. p. 9, f. 1. Krombh. 62, f. 3-5. Smith. P.M. f. 24.*

In woods. Common.

Forming large rings; pileus whitish, pallid, or tan-coloured, with the disc flesh-coloured or brick-red, variable in size and in length of the stem.—Spores pip-shaped, $\cdot 00035 \times \cdot 00023$ in.

- 313. Agaricus (Hebeloma) fastibilis.** *Fr.* "Ochrey Hebeloma."

Pileus compact, convexo-plane, repand, obtuse, viscid, smooth; stem solid, firm, sub-bulbous, white, fibroso-squamosa; veil evident; gills emarginate, rather distant; pallid, whitish, then clay-coloured or cinnamon.—*Fr. Epicr. p. 178. Schæff. t. 221. Batt. t. 15, D. Paul. t. 53, f. 2. Eng. Fl. v. p. 94 (partly.) Ann. N.H. no. 905.*

In woods. July—Oct. Common. [United States.]

Densely gregarious or solitary; pileus 1-3 in. broad, viscid, moist, or dry, very fleshy, sometimes only sub-carnose, sub-hemispherical, sometimes rugoso-plicate, in large specimens ochraceous, with a rufous tinge, margin pale, involute and downy; gills broad, edges often lachrymose, ventricose, adnexed, emarginate or adnate, rather irregular, sub-argillaceous or cinnamon; stem 2-4½ in. high, 2 lines-1 in. thick, sub-bulbous, or nearly equal, somewhat rooting, clothed with scattered fibrillose scales, especially towards the apex, often twisted; at length hollow; odour disagreeable, somewhat resembling cherry-laurel flowers.—*M. J. B.* Spores pip-shaped 0004 × 0003 in. (*Pl. IV., f. 20.*)

- 314. Agaricus (Hebeloma) testaceus.** *Batsch.* "Brick-red Hebeloma."

Pileus fleshy, campanulate, convex, obtuse, even, rather viscid; stem hollow, rather bulbous, flocculose or fibrillose, pallid, mealy above; gills attenuated, nearly free, lanceolate, crowded, ascending, pale, then ferruginous.—*Fr. Epicr. p. 178. Batsch. f. 198.*

In woods.

Pileus about 1½ in. broad, pale brick-red, ochraceous, or tan-coloured; stem 3 in. long, 3 lines thick, pallid, sprinkled above, with a whitish meal.

Sect. 3. Veil and odour none.

- 315. Agaricus (Hebeloma) longicaudus.** *P.* "Long-stemmed Hebeloma."

Pileus fleshy, convex, then expanded, even, smooth, viscid; stem almost hollow, fragile, nearly equal, white, mealy above; gills emarginate, crowded, serrulated, dry, pale clay-coloured.—*Fr. Epicr. p. 181. Batt. t. 21, f. F. Berk. Outl. t. 9, f. 2.*

In woods.

Pileus pale 1½-2 in. broad; stem 4 in. long, 3-4 lines thick, white, farinaceous above; flesh soft, watery; odour faint, not unpleasant. Spores 0004 × 00025 in.

B. INOCYBE.—Cuticle fibrous, dry.

Sect. 1. Squarrosi—pileus squarrose.

316. Agaricus (Hebeloma) relicinus. *Fr.* "Moss Hebeloma."

Pileus fleshy, thin, conical, then expanded, obtuse, squarrose, with tomentose scales, stem solid, soft, equal, floccoso-squamose; gills adnexed, crowded, yellow, then olivaceous.—*Fr. Epicr. p. 171. Eng. Fl. v. p. 96.*

In marshy fir woods, amongst *Sphagnum*.

Gregarious; pileus 1 in. across, at first conic obtuse, 4 lines high, then expanded; gills close, alternate, at length dingy-olive; stem 2 in. high, 2 lines thick.—*Fries.*

317. Agaricus (Hebeloma) flocculentus. *Poll.* "Woolly Hebeloma."

Pileus somewhat fleshy, hemispherical, then expanded, obtuse, floccoso-squamose, the scales of the disc erect, and sharp; stem solid, slender, squamoso-fibrillose, powdered with white dust above; gills seceding, thin, toothed, of a pallid clay colour.—*Fr. Mon. Hym. i. p. 336. Ag. lanuginosus. Fr. Epicr. p. 171. Eng. Fl. v. p. 96. Vaill. t. 13, f. 4-6. Pers. Ic. t. 8, f. 4. Bull. t. 370.*

On the ground.

Inodorous; pileus 1 in. or less broad, campanulato-convex, obtuse, then expanded, sub-umbonate, clothed with close squamuloso-squarrose down, which at length becomes obsolete, and leaves the pileus yellowish; flesh of the pileus and stem dirty white; gills broad, ventricose, close, pallid, at length brownish; stem $1\frac{1}{2}$ -2 in. high, 1-2 lines thick, equal, tough, covered with brown fibrillose down, apex minutely pruinose.—*Fries.*

318. Agaricus (Hebeloma) plumosus. *Bolt.* "Downy Hebeloma."

Pileus rather fleshy, convexo-plane, disc squarrose, with erect fasciculate flocci, margin fibrillose; stem stuffed, then hollow, slender, flexuose, floccoso-squamose, naked above; gills subadnate, scarcely crowded, ventricose, quite entire, dingy.—*Fr. Epicr. p. 172. Bolt. t. 33. Eng. Fl. v. p. 96.*

In moist pine woods. Aug.

Pileus $1\frac{1}{2}$ in. broad, thickly covered with little downy tufts; stem 4 in. high, 1 line or more thick.

Sect. 2. Laceri—pileus torn.

- 319. Agaricus (Hebeloma) pyriodorus.** *P.* Pear-scented Hebeloma."

Pileus fleshy, conical, then expanded, umbonate, clad with fibrous adpressed scales; stem stuffed, firm, equal, fibrillose, pruinose, and pale above; gills emarginate, rather distant, dirty white, then nearly cinnamon brown.—*Fr. Epicr. p. 173. Bull. t. 532, f. 1. Eng. Fl. v. p. 96.*

In woods. Sept. Oct.

[Cincinnati.]

Pileus 2 in. across, broadly and strongly umbonate, the margin at length a little turned up, fibrilloso-squamulose, fleshy, pallid umber; gills adnexed, ventricose, pale; stem 2-3 in. high, 4 lines thick, fibrillose, white, when bruised somewhat of the same hue as the pileus; veil very fugacious; odour penetrating, like that of rotten pears.—*M. J. B.*

- 320. Agaricus (Hebeloma) scaber.** *Müll.* "Rough Hebeloma."

Pileus fleshy, conical, then convex, obtusely gibbous, sprinkled with fibrous adpressed scales; stem solid, thick, equal, silky fibrillose, veiled; gills adnexed, crowded, dingy.—*Fr. Epicr. p. 172. Sow. t. 207. Eng. Fl. v. p. 96.*

In woods.

Pileus 1½ in. across, campanulate, subumbonate, dingy greyish-brown, scaly; gills pale dingy brown, rather numerous, nearly free; stem 1-1½ in. high, 2-3 lines thick, solid, whitish, fibrillose, furnished with a bark-like external coat; sometimes subgregarious.—*Grev.*

- 321. Agaricus (Hebeloma) lacerus.** *Fr.* "Torn Hebeloma."

Pileus somewhat fleshy, convex, then expanded, obtuse, umbonate, squamoso-fibrillose; stem stuffed, slender, short, fibrillose, naked above, reddish within; gills adnexed, broad, ventricose, white, tinged with red, then mouse-coloured.—*Fr. Epicr. p. 173. Fl. Dan. t. 1846, f. 1.*

On the ground in woods.

Stem 1-2 in. long, equal, or attenuated at the base, tough, paler than the pileus; pileus about 1 in. broad, obtusely umbonate, at first closely fibrillose, then rimoso-squamose and squarrose, mouse-coloured, growing pale and yellowish.

- 322. Agaricus (Hebeloma) obscurus.** *P.* "Violet Hebeloma."

Pileus somewhat fleshy, campanulate, then plane, umbonate, longitudinally fibrillose; disc squamose; stem stuffed, sub-

flexuose, fibrillose, violet brown; gills uncinete, adnexed, crowded, ventricose, olivaceous, then brown.—*Fr. Epicr. p. 173. Ann. N.H. no. 682.*

On the naked ground. Nov.

Remarkable for its violet coloured stem or flesh, and its uncinete adnexed gills.—*M. J. B.* Spores pale brown, oval, or obovate, 0003×0002 . in.

323. Agaricus (Hebeloma) flocculosus. *Berk.* "Flocculose Hebeloma."

Pileus subcarnose, convex, subcampanulate, umbonate, sericeo-squamulose; stem fibrillose, squamuloso-pulverulent above; gills pale, fawn-coloured, then obscurely ferruginous, ventricose, adnate.—*Eng. Fl. v. p. 97. Berk. Outl. p. 154.*

On naked soil, and amongst grass. Rare.

Pileus 1 in. broad, convex, subcampanulate, umbonate, sericeo-squamulose, brownish fawn colour, margin smoother, veil white, fibrillose, fugacious; gills at first pale fawn, at length dull ferruginous, ventricose, arched behind, and then adnate but not broadly so, margin white; stem $1\frac{1}{2}$ in. high, 2 lines thick, fibrillose, pale fawn, beneath the fibrillæ brown, the apex minutely squamuloso-pulverulent. Odour like new meal.—*M. J. B.*

324. Agaricus (Hebeloma) Hookeri. *Klotsch.* "Hooker's Hebeloma."

Pileus submembranaceous, obtuse, umbonate, clothed with branny scales; stem shining, purple, pruinose with fawn-coloured meal; gills purple, at length cinnamon, adnexed.—*Eng. Fl. v. p. 97. Berk. Outl. p. 154.*

In garden pots. April—Oct. Glasgow.

Pileus 5-8 lines broad, fawn-coloured, centre umber; gills $1-1\frac{1}{2}$ line broad, beautiful purple, at length cinnamon, veil floccoso-fibrillose, very fugacious; stem $1-1\frac{1}{2}$ in. high, $\frac{1}{2}$ line thick, fistulose, shining purple, pruinose with fawn-coloured meal.—*Klotsch.*

325. Agaricus (Hebeloma) deglubens. *Fr.* "Peeling Hebeloma."

Pileus somewhat fleshy, convexo-plane, obtuse, umbonate, torn into adpressed fibrils, disc somewhat scaly; stem solid, with adpressed fibrils, pallid, apex darker, mealy; gills adnate, ventricose, somewhat distant, dingy, then cinnamon.—*Fr. Epicr. p. 173. B. & Br. Ann. N.H. 1866, no. 1117.*

In woods. Aug. King's Cliffe.

Stature of *A. obscurus*, but colour and punctate apex of the stem (not white) very distinct. Pileus reddish bay, then yellowish, peeling off in darker fibrous scales; flesh white.

Sect. 3. Rimosi—pileus cracked.

326. Agaricus (Hebeloma) fibrosus. *Sow.* “Fibrous Hebeloma.”

Pileus fleshy, thin, obtusely campanulate, silky, even, at length cracked; margin flexuous, broken; stem long, solid, striate, squamoso-flocculose above; gills free, crowded, linear-lanceolate, dirty-white.—*Sow. t.* 414. *Berk. Outl. p.* 155. *Eng. Fl. v. p.* 95.

In fir woods. July—Sept.

Pileus 3 in. broad, fleshy, especially in the disc, campanulate, irregular, longitudinally rimose, silky, dingy; gills semi-lanceolate, 2-3 lines broad, pallid. Stem 2 in. or more high, 3 lines thick, equal, striate, dirty-white, odour nauseous. *Fries.* Spores $\cdot 0004 \times \cdot 00025$ in.

327. Agaricus (Hebeloma) fastigiatus. *Fr.* “Peaked Hebeloma.”

Pileus fleshy, thin, conico-campanulate, longitudinally fibrous, and cracked; stem solid, stout, twisted, fibrously-silky; gills free, crowded, yellow, then brownish-olive (spores rough).—*Fr. Epicr. p.* 174. *Berk. Outl. t.* 8, *f.* 4. *Sterb. t.* 22. D. E.

In woods. Rare.

Yellow-brown. Stem 3-4 in. long, but variable in stature, attenuated upwards. Spores rough, with little nodules.

328. Agaricus (Hebeloma) Curreyi. *Berk.* “Currey’s Hebeloma.”

Pileus convex, expanded, longitudinally fibrous, slightly cracked, not umbonate; stem straight, attenuated upwards, finely fibrillose; gills yellowish, then brownish-olive, free; spores perfectly even.—*Berk. Outl. p.* 155.

In woods. Aug.

Closely resembling *A. fastigiatus*, but by no means umbonate. The stem is dark, and the spores, which are subcynibiform, perfectly even.—*M. J. B.*

329. Agaricus (Hebeloma) euthelus. *B. & Br.* “Fir-leaf Hebeloma.”

Pileus expanded, strongly umbonate, undulating, fawn-coloured, shining, silky, subsquamulose; stem nearly equal, pallid, striate, solid, fibrous; gills pallid, margin white, toothed, adnate.—*Ann. Nat. Hist.* 1865, no. 1004, *pl. xiii. fig.* 2.

On the ground amongst fir leaves. Aug. Aboyne, Aberdeenshire.

Smell farinaceous, rather disagreeable. Spores even, sub-elliptic, $\cdot 00029$ in. long. It differs from *A. fastigiatus* in the adnate gills, smooth, not rough, spores; and from *A. Curreyi*, with which it agrees as to the spores, in its strongly umbonate pileus, nearly equal stem, and adnate gills.—*B. & Br.*

330. Agaricus (Hebeloma) rimosus. Bull. "Cracked Hebeloma."

Pileus fleshy, thin, campanulate, silky, fibrous, expanded longitudinally, cracked; stem solid, firm, nearly smooth, bulbous, whitish mealy above; gills free, subventricose, brownish clay-coloured.—*Fr. Epicr. p.* 174. *Eng. Fl. v. p.* 97. *Bull. t.* 388. *Berk. Outl. t.* 8, *f.* 5. *Sow. t.* 323. *Grev. t.* 128. *Batsch. f.* 107. *Krombh. t.* 44, *f.* 10-12. *Jungh. t.* 6, *f.* 6, *var.* *Gard. Chron.* (1861), *p.* 5, *fig.*

Woods and waste places. June—Sept. [United States.]

Subgregarious. Pileus 1-2 in. broad, shining, satiny, with adpressed fibrillæ, brown-yellow, at first campanulate, then nearly plane and umbonate, cracked in a radiate manner, the inner substance appearing through the cracks of a yellow hue, sometimes the cuticle cracks concentrically, and the lower edge of the cracked portions is reflected so as to present a squarrose appearance; gills ventricose, adnexed, at first mealy white, the margin opaque, then olivaceous, with the margin white and crenate. Stem $1\frac{1}{2}$ -2 $\frac{1}{2}$ in. high, distinct from the pileus, sub-bulbous, nearly white, fibrillose at the base, clothed above with white mealy scales.—*M. J. B.* Spores '0004 \times '00028 in.

331. Agaricus (Hebeloma) auricomus. Batsch. "Golden-haired Hebeloma."

Small, thin; pileus yellowish, margin striate, stem fistulose; gills fixed, ventricose, whitish, then brown.—*Fr. Epicr. p.* 175. *Batsch. f.* 21. *Berk. Outl. p.* 155.

In woods.

[Cincinnati.]

Included by Fries as a variety of *Ag. descissus*. Pileus much cracked.

332. Agaricus (Hebeloma) trechisporus. Berk. "Rough-spored Hebeloma."

Pileus submembranaceous, convex, strongly umbonate, at first viscid, but soon dry and silky; stem slightly striate and mealy; gills ventricose, emarginate, scarcely adnate, pinkish-grey; spores rough.—*Berk. Outl. p.* 156, *t.* 8, *f.* 6. *Ann. N.H. no.* 71.

In woods, amongst fern. August.

Pileus 1 in. broad, convex, strongly umbonate; margin thin, viscid, but soon dry and satiny; umbo tawny, margin paler, with a slight livid tinge; gills ventricose, emarginate, pinkish grey, extreme margin denticulate. Spores bistre-brown, subreniform, covered with granules. Stem 2 in. high, 2 lines thick, white, slightly striate under a lens, and farinulent, nearly equal, except at the base, the outer coat of which is cottony.—*M. J. B.*

333. Agaricus (Hebeloma) hiulcus. *Fr.* "Red-flesh Hebeloma."

Pileus somewhat fleshy, conical, expanded, umbonate, fibrillose, rimoso-squamose; stem stuffed, rigid, elongated, silky-fibrillose, pruinose above, as well as the flesh, pale flesh-coloured; gills nearly free, scarcely crowded, broad, whitish flesh-colour, darker at the base, at length olivaceous.—*Fr. Ep. p.* 175. *Batt. t.* 18, c. *B. & Br. Ann. N.H.* (1866), no. 1118.

In woods. Sept. Fineshade.

Allied to *A. rimosus*, but the flesh turns everywhere reddish, when cut or bruised. Stem 2-3 in. long, 2-3 lines thick, closely fibrillose. Pileus 1-2 in. broad, closely fibrillose and scaly, cracked, brown or olive.

334. Agaricus (Hebeloma) lucifugus. *Fr.* "Strong-scented Hebeloma."

Pileus rather fleshy, convexo-plane, sub-umbonate, clad with adpressed fibrils or scales. Stem solid, firm, equal, smooth, sub-pruinose above; gills nearly free, crowded, plane, from yellowish-white changing to olive.—*Fr. Epicr. p.* 177. *Pers. Ic. Pict. t.* 15, f. 2. *Jungh. t.* 6, f. 4. *Ann. N.H. no.* 792.

On the ground in woods. Sept.

Pileus about an inch across, brownish, or olive. Stem 1½ in. long, 2 lines thick. Odour strong.

335. Agaricus (Hebeloma) sindonius. *Fr.* "Delicate Hebeloma."

Pileus fleshy, thin, conical, then convex, gibbous, obtuse, velvety-villose, veil sub-appendiculate; stem with a distinct medulla, at length hollow and smooth; gills attenuated, adnexed, lanceolate, whitish, then brown.—*Fr. Epicr. p.* 176. *Sow. t.* 365. *Batt. t.* 18, B.

In moist, shady places. Rare.

Pileus at length smooth, dirty white, becoming yellowish. Stem 2-3 in. long, white.

336. Agaricus (Hebeloma) geophyllus. *Sow.* "Wood Hebeloma."

Pileus somewhat fleshy, conical, then expanded, umbonate, even, silky-fibrillose; stem stuffed, equal, rather firm, white; veil fibrillose; gills adnexed, crowded, white, dingy, then earth-coloured.—*Fr. Epicr. p.* 176. *Sow. t.* 124. *Pers. Ic. t.* 14, f. 2. *Ic. & Des. t.* 1, f. 0. *Eng. Fl. v. p.* 98. *Bull. t.* 522, f. 2. *Fl. Boruss. t.* 388.

On the ground in woods. Common. [S. Carolina.]

Pileus 1 in. broad, umbonate, at length sub-inverted, white, lilac, brownish, yellowish, &c., satiny, often rimose. Gills adnate or adnexed, ventricose, earthy, not cinnamon, margin white, sub-dentate. Stem 1-3 in. high, 1-2 lines thick, flexuous, equal, or sub-bulbous, firm, very minutely farinaceous above, solid, less compact within. Odour strong and disagreeable.—*M. J. B.*

337. Agaricus (Hebeloma) vatricosus. *Fr.* "Little Hebeloma."

Pileus rather fleshy, convexo-plane, subumbonate, smooth, viscid, silky about the margin; stem fistulose, contorted, pulverulent; gills emarginate; ventricose, whitish, becoming brown.—*Fr. Epicr. p. 177. B. & Br. Ann. N.H. (1865), no. 1005.*

On dead stumps. Sept. Bodelwyddan, Flintshire.

Before the veil is ruptured it looks like a smooth *Lepiota*.—*B. & Br.*

Small, scarcely exceeding half an inch broad, viscid when young and moist, shining when dry, obsoletely silky at the margin. Inodorous.

Sub-Gen. 21. FLAMMULA, Fr. S. M. i. p. 250.

Spores in most species purely ferruginous, occasionally approaching yellow ochre, always bright in colour; veil filamentous, often obsolete; pileus fleshy, and, as the sub-genus is at present constituted, very variable. It may be,—1, covered with an inseparable fibrillose cuticle; 2, covered with a more or less viscid and separable cuticle; 3, pileus moist, and with no separable cuticle; 4, pileus neither pelliculose nor viscid, and broken up more or less into scale or fibrils; stem fleshy, fibrous, confluent, and homogeneous with the hymenophore; gills adnate, acutely adnate, or decurrent.

HAB. On the ground or on wood.—(*Pl. IV. fig. 21.*)

Fries says the natural affinity of *Flammula* is with *Pholiota*, but I consider all true *Flammulae* should correspond with *Clitocybe* and *Clitopilus*. I suspect some of the species of *Flammula* that approach *Pholiota* in structure might with propriety be removed to that sub-genus, and *Flammula* proper be restricted to species with decurrent gills. Most of the species are tasteless or bitter, and none edible. They appear in late autumn or early winter. Some species of *Paxillus* may be mistaken for *Flammulae*, but attention must be paid to the persistent gills, separating from the hymenophore and other characters in *Paxillus*.—*W. G. S.*

Sect. 1. Heterogenei—variable.

338. Agaricus (Flammula) helomorphus. *Seer.*
"White Flammula."

White; pileus fleshy, convexo-plane, gibbous, unequal, viscid, when dry silky, becoming even; margin naked; stem solid,

unequal, curved, even, nearly smooth; gills adnato-decurrent, crowded, white, then tan coloured.—*Fr. Epicr. p. 184. Secr. No. 837.*

In pine woods. (A. Jerdon.)

Stem about an inch long, 2-3 lines thick, rather attenuated downwards, above slightly silky. Pileus about 1 in. broad, sub-angular; gills 1 line broad.—*Fries.* Spores very small, 0001×00014 in.

339. Agaricus (Flammula) scambus. *Fr.* "Bow-legged Flammula."

Pileus somewhat fleshy, convexo-plane, then slightly depressed and floccoso-villose, viscid in moist weather; stem rather stuffed, short, incurved, flocculose, and veiled, white, attenuated below; gills subdecurrent, yellowish clay-coloured.—*Fr. Epicr. p. 184. Berk. Outl. p. 157.*

On larch.

Small, white, pileus scarcely exceeding an inch broad, at length dingy and clay-coloured, stem becoming somewhat ferruginous.

340. Agaricus (Flammula) floccifer. *B. and Br.* "Floccose Flammula."

Cæspitose, subcarnose; pileus convex, tawny, sprinkled with white fibrils; stem attenuated downwards, white, with silky scales, fistulose, umber within; gills rather broad, adnate, ferruginous.—*B. & Br. Ann. Nat. Hist. no. 909. t. 14, f. 1.*

On stumps of lime. Oct. Colleyweston.

Cæspitose; pileus 2 inches across, convex, expanded, tawny, somewhat zoned in drying, sprinkled with white fibrils, rather fleshy; flesh tawny at the edge and beneath the cuticle, elsewhere white; stem $1\frac{1}{2}$ in. high, $\frac{1}{4}$ in. thick, attenuated downwards, furfuraceous within the pileus, white, with silky scales, hollow, umber within; gills moderately broad, rounded behind, adnate, scarcely ventricose, wrinkled transversely, ferruginous, edge white, spores ferruginous; ring none. The habit is that of *A. velutinus*.

Sect. 2. Lubrici—viscid.

341. Agaricus (Flammula) lentus. *Pers.* "Dusky Flammula."

Pileus fleshy, convexo-plane, even, viscid; stem rather stuffed, long, equal, squamose; gills adnate, whitish, then clay-coloured.—*Fr. Epicr. p. 184. Eng. Fl. v. p. 95.*

On stumps.

[S. Carolina.]

Gregarious, subcæspitose; pileus 2-3 in. broad, plane, obtuse, very glutinous in wet weather, varying, with a yellowish, or pallid-livid (dirty-white) hue; stem 2-3 in. high, at length hollow.—*Fries.*

342. Agaricus (Flammula) gummosus. *Lasch.* "Viscid Flammula."

Pileus fleshy, plane, floccoso-squamulose, then even, viscid; stem stuffed, silky, fibrillose, red brown at the base; gills adnate, crowded, yellow, then cinnamon.—*Lasch. Linn.* (1827), no. 325. *Fr. Epicr. p.* 185. *B. & Br. Ann. N. H.* (1866), no. 1119. *Tratt. Aust. f.* 38.

On old stumps. Dec. Cambridge.

Pileus conical, then depressed, whitish, then olivaceous or greenish yellow, margin pallid, 1-2 in. broad. Flesh yellowish.

343. Agaricus (Flammula) spumosos. *Fr.* "Sulphury Flammula."

Pileus fleshy, thin, even, viscid; stem hollow, equal, slender, fibrillose, yellowish, then discoloured; gills adnate, yellow, at length ferruginous.—*Fr. Epicr. p.* 185. *S. M. i. p.* 252.

In woods. Epping Forest.

[United States.]

Gregarious, yellow, flesh greenish-yellow; stem attenuated at the base, at length darker, slender, 2-4 in. long, 2 lines thick, obsoletely fibrillose; pileus rather fleshy, subumbonate, becoming plane, about 2 in. broad, disc darker.—*Fries.* Spores 00023×00015 in.

344. Agaricus (Flammula) carbonarius. *Fr.* "Viscid Charcoal Flammula."

Pileus fleshy, becoming plane, then even, viscid; stem narrowly fistulose, slender, rigid, squamulose, pallid; gills adnate, clay-coloured brown.—*Fr. Ep. p.* 186. *B. & Br. Ann. N. H.* (1866), no. 1120. *Seem. Jour.* 1868. t. 75, f. 5-8. *Cooke exs. no.* 401.

On charcoal and burnt earth. Nov. Dec. Ascot. Epping.

This species, remarkable for its viscid pileus, squamulose stem, and adnate clay-coloured gills, occurred in great quantities as above. It is a very late species; gregarious, tough, 1 in. or more high; pileus rather tawny, flesh yellow; spores ferruginous, with an apiculus at one end.

Sect. 3. Udi—moist.

345. Agaricus (Flammula) flavidus. *Schæff.* "Yellow Flammula."

Pileus fleshy, convexo-plane, equal, smooth, moist; stem somewhat hollow, fibrillose, yellow, then ferruginous; gills adnate, yellow, then ferruginous.—*Fr. Epicr. p.* 187. *Schæff. t.* 35. *Tratt. Austr. f.* 14? *Eng. Fl. v. p.* 94. *Ann. N. H. no.* 330, 792*.

On trunks of firs, lime, &c. Oct. [S. Carolina.]

Very various in size; pileus obtuse, 1-2 in. or more broad, never viscid, when moist dirty yellow; gills obtusely adnate; veil web-like, sometimes forming a ring. Stem stuffed, sometimes hollow, ferruginous at the base, sometimes attenuated.—*Fries*.

346. Agaricus (Flammula) inopus. *Fr.* "Bolton's Flammula."

Pileus fleshy, thin, convexo-plane, moist, smooth; stem fistulose, thin, flexuose, with adpressed fibrils, at length brick-red below; gills adnate, crowded, linear, pallid yellowish, white.—*Fr. Epicr. p. 187. Bolt. t. 148. Batt. t. 22. C. Eng. Fl. v. p. 95.*

On pine trunks.

Introduced on the authority of Fries' quotation of Bolton's figure. Pileus $\frac{1}{2}$ -2 in. broad; veil fugacious; stem 3 in. high, $\frac{1}{4}$ in. thick.—*Eng. Fl.*

Sect. 4. Sapinei—growing on firs.

347. Agaricus (Flammula) hybridus. *Fr.* "Hybrid Flammula."

Pileus fleshy, hemispherical, then expanded, obtuse, smooth, even, moist; stem stuffed, soft, attenuated upwards, tawny, with a whitish veil, which forms a ring; gills adnate, rather crowded, pale yellow, then tawny.—*Fr. Epicr. p. 189.*

On fir stumps. Gopsall.

Pileus regular, disc compact, at first tawny cinnamon, then brownish orange; flesh pallid.

348. Agaricus (Flammula) decipiens. *Smith.* "Charcoal Flammula."

Cæspitose; pileus convex, fleshy, minutely squamulose, dry, rich brown, becoming pallid; umbo almost white, stem often swollen, twisted, striate, attenuated downwards, rich tawny; gills crowded, moderately broad, decurrent, luminous brown, flesh within golden yellow, bright brown at base; spores bright tawny, ring none.—*Seem. Journ. 1869, p. 249, t. 95, f. 5-8.*

On burnt earth, charcoal, &c. June. Epping.

Pileus 1 in. across. Stem 2 in. high. Inclined to be fasciculate; mixed in growth with *A. (Flammula) carbonarius*. *Fr.* Though at a first glance it resembles the latter species, it differs greatly in the attachment of the gills, which are adnate in *A. carbonarius*, but truly decurrent in *A. decipiens*. Spores oval, or with an apiculus at one end, 0003×00017 in.—*W. G. S.*

- 349. *Agaricus (Flammula) sapineus.* Fr.** "Bright-spored Flammula."

Pileus compact, convexo-plane, very obtuse, finely floccoso-squamulose, then cracked; stem rather stuffed, thick, sulcate, rooting, yellowish, without a ring; gills adnate, broad, golden yellow, then tawny cinnamon.—*Sys. Myc.* i. p. 239. *Eng. Fl.* v. p. 95. *B. & Br. Ann. N.H.* 1865, no. 1006. *Pers. Ic. & Descr.* t. 4, f. 7. *Trans. Woolhope Club*, 1868, p. 246.

On fallen branches of Scotch fir, and chips and sawdust about a saw-pit. Aboyne. Aug. On charcoal heaps in woods, round the Wrekin. [Cincinnati.]

This species is extremely variable, especially as to the breadth and mode of attachment of the gills. It is remarkable for the bright colour of the spores.—*B. & Br.* Subcæspitose; stem usually short, solid, or hollow, often compressed, lacunose, &c. Pileus 1-4 in. broad, disc subopaque, margin paler, shining. Vestiges of the yellow veil scarcely manifest. Odour strong. Spores $\cdot 00032 \times \cdot 0002$ in. (*Pl. IV.*, f. 21.)

- 350. *Agaricus (Flammula) picreus.* Fr.** "Delicate Flammula."

Pileus rather fleshy, convex, then expanded, even, smooth; stem fistulose, thin, almost umber, attenuated upwards, without a veil, at first pulverulent; gills adnate, subseceding, crowded, narrow, yellow, then ferruginous.—*Fr. Epicr.* p. 190. *Pers. Ic. Descr.* t. 4, f. 7. *Fr. Mon. Hym.* i. p. 362.

On old deal boards and pine stumps.—*W. G. S.*

Cæspitose, delicate. Stem 2-3 in. long, 1-2 lin. thick, slightly attenuated upwards, straight, when young pulverulent, umber. Pileus obtuse, regular, 1 in. broad, when young rufous or brownish cinnamon, when older becoming paler and tawny. Gills scarcely 1 line broad, normally adnate. Spores $\cdot 00023 \times \cdot 00015$ in.

- 351. *Agaricus (Flammula) filiceus.* Cooke.** "Fern-stem Flammula."

Pileus fleshy, convexo-plane, minutely squamuloso-fibrillose; stem stuffed, equal, slender; veil adhering to the stem and margin of pileus in reddish fugacious threads; gills crowded, adnate, sulphur yellow, at length tawny cinnamon.—*Seem. Journ.* (1863) p. 66, t. 3, f. 1.

On old tree-fern stems.

Pileus 1-2 in., obtusely convex, at length plane, golden yellow, minutely flocculoso-squamulose. Stem $1\frac{1}{2}$ - $2\frac{1}{2}$ in. high, yellowish, dark at the base; often tufted, sometimes solitary. Spores $\cdot 0003 \times \cdot 0002$ in.

This species was first discovered in a conservatory at Highgate, on old tree-fern stems, originally from New Zealand. It has since been found by Mr. W. G. Smith, and is therefore included here as having equal claim with some other species to find a place in the British Flora.

Sub-Gen. 22. CREPIDOTUS. Fr. S. M. i. p. 272, in part.

Spores dark, or yellowish brown; veil none; pileus excentric, dimidiate, or resupinate; flesh soft; stem lateral, or wanting; when present, confluent with and homogeneous with the hymenophore.

HAB. Most of the species grow on wood, a few on moss.—
(*Pl. IV., f. 22.*)

The species are very irregular and variable. They mostly appear late in the autumn, and none are known to be edible. The pink-spored species, included by Fries in this sub-genus, are removed to Smith's new sub-genus *Claudopus*.

Sect. 1. Eudermi.

352. Agaricus (*Crepidotus*) *alveolus*. Lasch. "Ochrey *Crepidotus*."

Pileus fleshy, soft, lateral, obovate, then repand, opaque, contracted, and tomentose-villous behind; gills determinate, crowded, broad, clay-brown.—*Fr. Epicr. p. 210. Pers. M.E.t. 24, f. 3. Ann. N.H. no. 685.*

On old stumps. Aug. Sept. Northamptonshire.

Closely allied to *A. mollis*, but not at all gelatinous. Spores '0003 in. long. Pileus 2 in. and more broad, ochraceous brown, then olive at the margin, when dry becoming paler.

353. Agaricus (*Crepidotus*) *mollis*. Schæff. "Soft *Crepidotus*."

Pileus between subgelatinous and fleshy, flaccid, even, smooth, becoming pale; stem obsolete; gills crowded, linear, from whitish to watery cinnamon.—*Fr. Epicr. p. 210. Schæff. t. 213. Sow. t. 98. Batsch. f. 38. Berk. Outl. t. 9, f. 6. Huss. i. t. 74. Eng. Fl. v. p. 102. Letell. t. 688. Price, f. 25. Berk. exs. no. 18.*

On old stumps. July—Oct. Common. [United States.]

Solitary or imbricated. Pileus 1-2 in. broad, at first horizontal, subgelatinous, the base tomentose, or substrigose, margin transparent, minutely tomentose, then ascending, subfulvous, pallid when dry, margin waved, sometimes minutely squamulose, often stained with the elliptic ferruginous spores. Gills rounded behind, watery-umber, at first saturated with moisture, then dry and crisp.—*M. J. B.* Spores dark umber, '00035 × '00022 in.

(*Pl. IV., fig. 22.*)

- 354. Agaricus (Crepidotus) haustellaris.** *Fr.* "Kidney-shaped Crepidotus."

Pileus rather fleshy, reniform, even, slightly villous; stem lateral, attenuated upwards, villous, white; gills rounded, nearly free, brownish cinnamon.—*Fr. Epicr. p.* 211. *Berk. Outl. p.* 164. *Batsch. f.* 121.

On dead trunks. Rare.

Not observed since the time of Withering; gregarious, caespitose, or imbricated. Stem distinct, attenuated upwards, 2-4 lines long, 1 line and more thick, at first ascending, then horizontal. Pileus lateral, kidney-shaped, $\frac{1}{2}$ -1 in. broad, pale red tan-colour, becoming pale. Flesh watery, pale yellowish.

- 355. Agaricus (Crepidotus) Rubi.** *Berk.* "Bramble Crepidotus."

Pileus fleshy, clothed with very minute crystalline meal; stem short, incurved, solid, strigose at the base; gills adnato-decurrent, greyish, then umber, slightly ventricose.—*Berk. Outl. p.* 164, *t.* 9, *f.* 7. *Eng. Fl. v. p.* 102.

On dead bramble, &c. Aug. Rare.

Pileus $\frac{1}{4}$ in. or more broad, at first regular, with a short stem, gradually becoming excentric, and resupinate, of a yellowish, or livid-grey hue, pallid when old; gills rather distant, at first greyish, then umber, edge pulverulent. Stem very short, at first straight, then incurved, solid, externally mealy, adhering by a little fine down.—*M. J. B.*

- 356. Agaricus (Crepidotus) chimonophilus.** *B. & Br.* "Downy Crepidotus."

White. Pileus convex, rather thick, villous; stem very short, or obsolete; gills distant, attenuated behind.—*Berk. Outl. p.* 164. *Ann. Nat. Hist. no.* 687.

On small dead branches of *Pyrus torminalis*. Benefield, Norths.

Pure white. Pileus $\frac{1}{4}$ in. across, convex, clothed with villous down, margin inflexed. Stem extremely short or obsolete. Gills few, distant. Spores very pale, yellow-brown, oblongo-elliptic, with a distinct lateral nucleus.—*M. J. B.*

- 357. Agaricus (Crepidotus) pezizoides.** *Nees.* "Pezizæform Crepidotus."

Pileus sessile, thin, cup-shaped, then reflexed, mealy, subtomentose; gills meeting in the centre, somewhat distant, olivaceous-brown, then tawny.—*Fr. Epicr. p.* 212. *Nees. A.N. Cur. ix. t.* 6, *f.* 18. *Eng. Fl. v. p.* 103.

On rotten branches. Rare.

Gregarious, fleshy, subgelatinous, 1 line high and broad, fixed at the base by very delicate white fibres; gills about 12, thick, ventricose.—*Fries*. Gills white to stone-colour, margin sub-crenate, white, and somewhat cottony in young specimens.—*Purton*.

Sub-Gen. 23. NAUCORIA. Fr. S. M., i. p. 260.

Spores various shades of brown, dull or bright; veil absent, or attached to the edge of the pileus, in young plants in the form of minute flakes; pileus convex and inflexed, smooth, flocculent or squamulose; stem cartilaginous, confluent with but heterogeneous from the hymenophore.

HAB. Terrestrial or epiphytal. (*Pl. IV., f. 23.*)

No subgenus includes so many dissimilar species as this. In size, structure, the nature of the veil, and the colour of the spores, they differ exceedingly. *Naucoria* corresponds with *Collybia*, *Leptonia*, and *Psilocybe*.—*W.G. S.*

Sect. 1. Gymnoti—naked, spores rusty.

358. Agaricus (Naucoria) cucumis. P. "Cucumber Naucoria."

Pileus somewhat fleshy, broadly campanulate, smooth, growing pale; stem thin, firm, smooth, dark-brown, thickened at the apex, hollow, sub-pruinose; gills slightly adnexed, ventricose, pallid, saffron-yellow.—*Fr. Epicr. p. 193. Sow. t. 344. Eng. Fl. v. p. 99.*

Amongst sawdust.

Pileus 1-1½ in. broad, even, smooth, when moist bay-brown, with a purplish tinge, pale about the margin, when dry fawn-coloured or tan; gills very ventricose, close, distinct, dirty white, with somewhat of a saffron tint. Stem 1½-2 in. high, 1-1½ line thick, attenuated downwards, firm, smooth, hollow, pale at the apex. Odour exactly that of fresh cucumber.—*Fries*.

359. Agaricus (Naucoria) centunculus. Fr. "Lurid Naucoria."

Pileus somewhat fleshy, convexo-plane, obtuse, lurid-greenish, then yellowish, turning pale; stem fistulose, with whitish down at the base, pulverulent above; gills adnate, then seceding, thick, broad, cinereous yellow, as well as the stem.—*Fr. Epicr. p. 193. Ann. N.H. no. 72.*

On rotten wood. Oct. Rare.

Gregarious. Pileus 3-10 lines broad, olivaceous brown, becoming pale, even or slightly striate; gills emarginate or free, sometimes crowded, sometimes somewhat distant, crisped when old, the edge denticulate with greenish-yellow flocci.

360. *Agaricus (Naucoria) horizontalis.* Bull. "Horizontal Naucoria."

Pileus somewhat fleshy, plano-convex, obtuse, even, smooth; stem solid, very short, incurved, naked; gills rounded behind, free, broad, plane. The whole plant of a watery cinnamon colour.—*Fr. Epicr. p.* 194. *Bull. t.* 324. *Ann. N.H. no.* 331.

On elm trunks. Rare.

Pileus $\frac{1}{2}$ in. broad, gills adnexed or nearly free; stem $\frac{1}{2}$ in. long, 1 line thick.

361. *Agaricus (Naucoria) melinoides.* Fr. "Tawny Naucoria."

Pileus somewhat fleshy, convexo-plane, obtuse, umbonate, even, smooth, moist; stem hollow, slightly-thickened, pruinose above, base white; gills adnate, triangular, toothed, honey-coloured.—*Fr. Epicr. p.* 195. *Berk. Outl. t.* 9, *f.* 3. *Bull. t.* 560, *f.* 1. *Krombh. t.* 3, *f.* 14. *Eng. Fl. v. p.* 100.

On lawns. Oct. Common.

Pileus 2 lines to 1 in. broad, submembranaceous, umbonate, when moist tawny, margin pellucid, ochraceous or whitish when dry; gills very variable, adnexed, or broadly adnate, ventricose, at first paler than the pileus, at length cinnamon. Stem 1-2 in. high, scarce 1 line thick, fistulose, fibrillose above, subpruinose, thickened below and downy, changing colour. The gills remain bright.—*M. J. B.*

362. *Agaricus (Naucoria) nuceus.* Bolt. "Nut-like Naucoria."

Pileus submembranaceous, globoso-campanulate, umbilicate, punctulate; margin incurved, somewhat lobed; stem fistulose, slender, silky-fibrillose, white; gills attenuated, adnate, ascending, slightly lobed, cinnamon.—*Fr. Epicr. p.* 194. *Bolt. t.* 70.

On the ground amongst firs.

Slender, but tough. Stem 2-3 in. Pileus $\frac{1}{2}$ -1 in., pale chestnut colour; gills semi-circular, not sinuate, 3-4 lines broad. Spores, with an apiculus at one or both ends, 00045×00025 in.

363. *Agaricus (Naucoria) sideroides.* Bull. "Stellate Naucoria."

Pileus rather fleshy, campanulate, then expanded, umbonate, smooth, slightly viscid; stem stuffed, attenuated, even, pallid; gills with a decurrent tooth, uncinat, fixed, narrow, crowded, pallid, ochraceous, then cinnamon.—*Fr. Epicr. p.* 196. *Bull. t.* 588. *B. & Br. Ann. N.H.* 1865, *no.* 1007.

On the trunk of an ash tree. Nov. Apethorpe.

Probably common. Much thicker than *A. hypnorum*, which it somewhat resembles.—*B. & Br.* Pileus ochraceous and shining when dry, margin at first incurved, then striate, about $\frac{1}{2}$ in. high and broad, when expanded 1 in. broad. Stem 3 in. long, pallid yellowish, at length becoming ferruginous.

Sect. 2. Phæoti—spores brown.

364. *Agaricus (Naucoria) vervacti.* *Fr.* “Meadow
Naucoria.”

Pileus fleshy, convexo-plane, umbonate, even, smooth, viscid; shining when dry; stem stuffed, then hollow, attenuated, smooth, rigid, rootless, whitish; gills adnate, with a decurrent tooth, crowded, then ventricose, pallid, then ferruginous-brown.—*Fr. Epicr. p.* 197. *Batt. t.* 13, *F. Batsch. f.* 108 (?) *Ann. N.H. no.* 273.

In meadows, gardens, &c. Bromley.

Stem short, about 1 in., rather thick. Pileus yellow, slightly viscid, soft, obtuse. Flesh white.

365. *Agaricus (Naucoria) pediades.* *Fr.* “Tan-coloured
Naucoria.”

Pileus somewhat fleshy, convexo-plane, obtuse or depressed, dry, at length opaque; stem medullate, rather flexuous, slightly silky, yellowish, base somewhat bulbous; gills adnexed, broad, subdistant, brownish, then dirty cinnamon.—*Fr. Epicr. p.* 197. *Paul. t.* 106, *f.* 2, 3. *Schæff. t.* 203. *Ann. N. H. no.* 683. *Letell. t.* 675.

In pastures. Nov. Cranford. Middlesex.

Stature variable, stem usually elongated; pileus about an inch broad, ochraceous, then tan-coloured.

366. *Agaricus (Naucoria) semiorbicularis.* *Bull.* “Half-
round Naucoria.”

Pileus rather fleshy, hemispherical, then expanded, even, smooth, rather viscid, at length rivulose; stem slender, tough, almost straight, pallid, ferruginous, shining, with a separable pith; gills adnate, very broad, crowded, pallid, then ferruginous.—*Fr. Epicr. p.* 197. *Bull. t.* 422. *Berk. Outl. t.* 9, *f.* 4. *Ann. N. H. no.* 274.

On lawns and pastures. Common.

Stem cartilaginous, tough, 3-4 in. long, scarcely exceeding 1 line thick, at length pale, ferruginous, darker at the base; pileus 1-2 in. broad, tawny, ferruginous, then ochrey; spores 0005×00032 in. (*Pl. IV., f.* 23.)

367. Agaricus (Naucoria) sobrius. *Fr.* "Sober Naucoria."

Pileus somewhat fleshy, convexo-plane, slightly viscid, sub-silky, disc darker, veil pruinose, fugacious; stem nearly fistulose, brownish at the base, clad with white flocci; gills adnate, crowded, broad, pallid, saffron yellow.—*Fr. Epicr. p.* 200. *Ann. N. H. no.* 912.

On the ground. Sept. King's Cliffe.

Pileus about an inch broad, yellowish, the edge of the gills becoming whitish; stem $1\frac{1}{2}$ in. long, 1 line thick, pallid above, ferruginous brown below, here and there with whitish silky spots.

368. Agaricus (Naucoria) escharoides. *Fr.* "Campanulate Naucoria."

Pileus rather fleshy, conico-convex, then expanded, obtuse, squamuloso-furfuraceous, becoming pallid; stem fistulose, flexuous, with adpressed fibrils, at length smooth and pallid; gills fixed, lax, ventricose, pallid, clay-colour or cinnamon.—*Fr. Epicr. p.* 201. *B. & Br. Ann. N. H.* (1866), no. 1122. *Schæff. t.* 226.

On bare ground. Aug. Apethorpe.

Pileus campanulate, obtuse, slightly fleshy, umbonate or umbilicate, sometimes plane, hygrophanous, innato-squamulose, often venulose, tawny, at length pallid; veil white, evanescent; stem flexuous, nearly equal, clothed with white fibrils, pale, ringless, fistulose; gills broad, bright cinnamon, distant, fixed, acute behind, at length seceding; spores 0006×00065 in. long, of a pure ochre, not peroxidate, brittle.—*B. & Br.*

369. Agaricus (Naucoria) conspersus. *P.* "Sprinkled Naucoria."

Pileus rather fleshy, convexo-plane, obtuse, nearly even, at length mealy, and broken up into scales, hygrophanous; stem fibrillose, brownish cinnamon; gills adnate, rather receding, crowded, cinnamon colour.—*Fr. Epicr. p.* 201. *Pers. Ic. & Desc. t.* 12, *f.* 3. *Krombh. t.* 3, *f.* 12. *Ann. N. H. no.* 911.

In woods and moist places. Sept. Colleyweston.

Gregarious; pileus cinnamon-bay, ochrey when dry, $\frac{1}{2}$ -1 in. broad; gills linear or ventricose; stem 1-2 in. long, 1 line thick, fibrillose, cinnamon, mealy above.

370. Agaricus (Naucoria) erinaceus. *Fr.* "Hedgehog Naucoria."

Pileus rather fleshy, convex, subumbilicate, squamose with fasciculate hairs; stem slender, fistulose, short, incurved, hairy; gills adnate, rather crowded, quite entire.—*Fr. Epicr. p.* 201. *Sow. t.* 417. *Batt. t.* 28, *f.* K. *Eng. Fl. v. p.* 98.

On dead sticks. Rare.

Small, solitary, persistent; stem slightly fistulose, adnate, on the epidermis of branches, by a dilated base, clothed with white pubescence, incurved, equal, about 4 lines high, scarce 1 line thick, umber-ferruginous; pileus subcarinose, disc umbilicate, $\frac{1}{2}$ in. broad, scaly with very dense fasciculate locks, umber-ferruginous, margin at first involute; gills rather broad, not close, adnate.—*Fries*.

371. Agaricus (Naucoria) siparius. *Fr.* "Veiled Naucoria."

Pileus rather fleshy, plane, obtuse; stem stuffed, pruinose above, clothed, as well as the pileus, with downy scales; gills adnate, broad, rather distant, floccose at the edge.—*Fr. Epicr. p. 201. Chev. t. 6, f. 9. Ann. N. H. no. 684.*

On soil, fern stems, &c.

Resembling *A. erinaceus*, but softer, and not so bright in colour, brownish rust-colour; stem $\frac{1}{2}$ -1 in. long; pileus 3-5 lin. broad, densely villososquamulose.

372. Agaricus (Naucoria) carpophilus. *Fr.* "Beech-mast Naucoria."

Pileus submembranaceous, convex, obtuse, mealy with shining atoms (not pilose, rarely squamulose); stem somewhat stuffed, short, slender, mealy, then naked, pallid; gills rounded behind, adnexed, nearly free, broad, rather distant, crenulate, ochraceous.—*Fr. Epicr. p. 202. Ann. N. H. no. 910.*

On the pericarps and leaves of beech. Sept. Colleyweston.

Small, pallid when dry; pileus 2-3 lines broad, hygrophanous, shining, with mealy atoms, tan-coloured when moist. Stem scarcely 1 in. long, filiform, pallid, at first mealy, then naked.

Sub-Gen. 24. GALERA. *Fr. S. M. i. p. 264.*

Spores ochraceo-ferruginous; veil often wanting, when present fibrous and fugacious; pileus more or less campanulate, margin straight, at first adpressed to the stem; stem cartilaginous, fistulose, confluent with but heterogeneous from the hymenophore; gills adnate, or with a decurrent tooth (exactly as in *Mycena*).

HAB. The greater number of species are terrestrial.

(*Pl. IV., f. 24.*)

The species are not numerous, and most are slender and brittle, appearing in the autumn. *Galera* corresponds with *Mycena*, *Nolanea*, *Psathyra*, and *Psathyrella*.—*W. G. S.*

Sect. 1. Pluteotropi—viscid.**373. Agaricus (Galera) reticulatus.** *P.* "Reticulated Galera."

Pileus slightly fleshy, campanulate, then expanded, rugoso-reticulate, viscid; margin striate; stem fragile, fibrillose, white; gills free, ventricose, crowded, saffron yellow, to ferruginous.—*Fr. Epicr. p.* 203. *Pers. Ic. & Desc. t.* 4. *f.* 4-6. *Berk. Outl. t.* 9, *f.* 5. *Ann. N.H. no.* 70.

On dead wood. Rare.

In the young state the pileus is of a delicate bistre, and it is only in age that it assumes a violet tinge, apparently from the colour of the spores being partly seen through the flesh.—*M.J.B.* Stem 2 in. long, white, slightly mealy above. Pileus 2 in. broad, at first viscid, and reticulated with anastomosing veins, becoming smooth with age.

374. Agaricus (Galera) aleuriatus. *Fr.* "Striate Galera."

Pileus submembranaceous, conico-convex, then plane, viscid, not wrinkled, striate; stem slender, pulverulent, rather incurved, white; gills free, ventricose, ochraceous saffron-colour.—*Fr. Epicr. p.* 203. *B. & Br. Ann. N.H.* (1866), *no.* 1123.

On rotten sticks. Oct. Coed Coch.

An extremely pretty species. Smaller and more delicate than *A. reticulatus*. Pileus blue-grey, pallid, or roseate; spores pale saffron yellow. Stem about 1 in. long. Pileus about 1 in. broad, striate, but not rugose.

*Sect. 2. Polytropi.***375. Agaricus (Galera) ovalis.** *Fr.* "Oval Galera."

Pileus submembranaceous, oval, or campanulate, even, hygrophanous; stem straight, equal, slightly striate, nearly of the same colour; gills almost free, ventricose, very broad, ferruginous.—*Berk. Outl. p.* 163. *Bull. t.* 552. *f.* 1. *A. campanulatus. Fr. Epicr. p.* 205.

On dung. Rare.

Pileus dusky-ferruginous, larger than *A. tener*. Gills at length somewhat lutescent. Stem about 3 in. long, straight, of the same colour as the pileus. Pileus about 1 in. high and broad, ferruginous when moist, yellowish when dry.

Sect. 3. Teneri—slender.**376. Agaricus (Galera) lateritius.** *Fr.* "Brick-red Galera."

Pileus submembranaceous, acorn-shaped, then conical, even, hygrophanous; stem tall, fragile, straight, attenuated upwards,

frosted with white meal ; gills nearly free, linear, very narrow, tawny, ferruginous.—*Fr. Epicr. p. 204. Fl. Dan. t. 1846, f. 2. Batt. t. 28, T.*

In rich pastures. Rare.

Stem white, 3 in. and more long ; pileus pinkish ochre, about 1 in. high ; when moist the margin is closely striate.

377. Agaricus (Galera) tener. Schæff. "Slender Galera."

Pileus submembranaceous, conico-campanulate, obtuse, hygrophanous ; stem straight, fragile, rather shining, nearly of the same colour ; gills adnate, crowded, ascending, rather broad, cinnamon.—*Fr. Epicr. p. 204. Schæff. t. 70, f. 6-8. Sow. t. 33. Bull. t. 535. Bolt. t. 66, f. 2. Eng. Fl. v. p. 100.*

Rich pastures, dungy ground, &c. Common.

[United States.]

Pileus 1 in. high and broad, subcarnose, campanulate, or conico-campanulate, smooth, shining, ochraceous when dry ; gills pale ferruginous, ascending, more or less adnate, ventricose, or sublinear, margin white, subserrulate ; stem 3-5 in. high, $1\frac{1}{2}$ line thick, striate, pulverulento-fibrillose, not brittle, bulbous at the base.—*M.J.B. Spores '00054 × '0003 in. (Pl. IV., f. 24.)*

378. Agaricus (Galera) antipus. Lasch. "Little pale Galera."

Pileus campanulate, then convex, even, hygrophanous, when dry sprinkled with atoms, disc slightly fleshy ; stem straight, short, striate, mealy ; base bulbous, fusiform, rooting ; gills almost free, crowded, lanceolate, yellowish ochre.—*Lasch. no. 401. Fr. Epicr. p. 205. Smith in Trans. Woolh. Cl. (1870).*

On mould in flower pots.

Simple, slightly rigid ; stem 1 in., paler than the pileus. Pileus $\frac{1}{2}$ -1 in., not striate, when moist ochraceous, when dry paler, almost white. Spores and then the gills rubiginous.

379. Agaricus (Galera) confertus. Bolt. "Crowded Galera."

Pileus submembranaceous, acutely conico-campanulate, smooth, hygrophanous ; stem slender, silky, shining, naked ; base equal, deeply rooting ; gills slightly adnexed, subdistant, white, then brownish-ochraceous.—*Fr. Epicr. p. 206. Bolt. t. 18.*

In stoves. Rare.

Densely crowded, very fragile ; pileus brown, ochraceous when dry, "conical, terminating in an acute point, which point is tinged with yellowish brown, the rest white, the surface smooth, the substance light and cottony. In large specimens it is about 1 in. in diameter ; in decay it withers, and becomes like soft paper."—*Bolton.*

380. Agaricus (Galera) sparteus. Fr. "Meadow Galera."

Pileus membranaceous, campanulate, convex, then expanded, obtuse, hygrophanous, dry, even, smooth; stem slender, rigid, flexible, smooth; gills adnate, crowded, plane, cinnamon coloured.—*Fr. Ep. p. 206. Bolt. t. 51, f. 1.*

Amongst moss in meadows. Rare.

Pileus 5 lines broad, cinnamon, striate and pellucid when moist, when dry tan-coloured. Stem 1-2 in. long, polished, smooth, base darker, of a brightish brown.

Sect. 4. Hypnophilæ—amongst moss.

381. Agaricus (Galera) embolus. Fr. "Heath Galera."

Pileus membranaceous, campanulate, obtuse, radiato-striate, hygrophanous; stem very smooth, shining, thickened upwards; gills adnate, triangular, thick, very distant, cinnamon.—*Fr. Epicr. p. 207.*

Amongst heath.

When moist shining, reddish tawny, when dry ochraceous. Stem 2 in. long, yellow, manifestly thickened upwards, smooth, naked. Pileus $\frac{1}{2}$ in. broad, hygrophanous.

382. Agaricus (Galera) hypnorum. Batsch. "Moss-loving Galera."

Pileus membranaceous, campanulate, subpapillate, smooth, striate, hygrophanous; stem slender, flexuose, lax, of the same colour, apex pruinose; gills adnate, rather distant, broad, lax, at length plane, cinnamon-yellow.—*Fr. Epicr. p. 207. Batsch. f. 96. Sow. t. 282. Bull. t. 560, f. i. C.E. Eng. Fl. v. p. 100.*

Amongst moss. Common.

[United States.]

Pileus 2-3 lines broad, conico-campanulate, of a beautiful tawny brown when moist, or sometimes reddish, the striate margin only when dry retaining its original hue, the rest pale, flesh thick in the centre, turning pale like the pileus. Gills ventricose, adnexed or adnate, tawny, rather broad. Stem 1 in. high, filiform, minutely fistulose, paler than the pileus, pruinose.—*M. J. B.*

383. Agaricus (Galera) sphagnorum. Pers. "Bog-moss Galera."

Pileus membranaceous, campanulate, smooth, striate, yellow-ochraceous, disc broad; stem long, slender, sub-fibrillose, tawny, gills adnate, subdistant, broad.—*Pers. Syn. p. 385. Bull. t. 560, f. H. B. & Br. Ann. N.H. 1865, no. 1008.*

On *Sphagnum*, on the borders of a pine wood. Aug. Aboyne.

Twice or three-times larger than *A. hypnorum*, of which Fries considers it a variety.

Sect. 5. Eriodermei—squamulose.

384. Agaricus (Galera) mycenopsis. Fr. "White-scaled Galera."

Pileus submembranaceous, campanulate, then expanded, disc even, slightly striate to the middle, about the margin at first whitish-silky, and veiled; stem much attenuated, whitish-silky; gills adnexed, seceding, ventricose, rather distant, whitish, then pale ochre.—*Fr. Epicr. p. 208. B. & Br. Ann. N.H. 1866, no. 1124.*

In marshy ground amongst *Sphagnum*. Aug.—Oct.

The specimens hitherto found belong to the variety mentioned by Fries, with adnate gills. Pileus with the margin clothed, with little white scales, the remains of the veil; stem slightly furfuraceous above; gills adnate, not merely fixed by a tooth.—*B. & Br.*

385. Agaricus (Galera) paludosus. Fr. "Swamp Galera."

Pileus submembranaceous, campanulate, then convex, acutely umbonate, hygrophanous, silky everywhere with persistent white hairs; stem fistulose, twisted, encircled with the remains of the white veil; gills adnate, plane, ovate, pale honey colour.—*Fr. Epicr. p. 209. B. & Br. Ann. N.H. 1866, no. 1125.*

In marshy ground, amongst *Sphagnum*. Aug. King's Cliffe.

Stem $1\frac{1}{2}$ -3 in. long, 1 line thick. Pileus $\frac{1}{2}$ in., when moist brownish honey colour, when dry tan-coloured.

Sub-Gen. 25. TUBARIA. Smith. Seem. Journ., 1870.

Pileus generally depressed, at first with an incurved margin; stem cartilaginous, hollow, confluent with but heterogeneous from the hymenophore; gills decurrent. (*Pl. IV., fig. 25.*)

As in *Eccilia* there are very few known representatives of this sub-genus, either British or Foreign. It is analogous with *Omphalia*, *Eccilia*, and *Deconica*.—*W. G. S.*

386. Agaricus (Tubaria) inquilinus. Fr. "Little Tubaria."

Pileus submembranaceous, convexo-plane, smooth, slightly striate, hygrophanous, centre somewhat fleshy; stem fistulose, short, tough, dark brown, attenuated downwards; gills adnato-

decurrent, triangular, convex, scarcely crowded, brownish ferruginous.—*Fr. Epicr. p.* 199. *Eng. Fl. v. p.* 99.

On chips in woods, gardens, &c.

Pileus a few lines across (3-6.) Stem 1 in. or more high, minutely fistulose, dark umber, with white fibrillæ and scales.—*M. J. B.* Analogous with *A. (Omphalia) sphagnicola.*—*W. G. S.*

387. Agaricus (Tubaria) furfuraceus. P. “Mealy Tubaria.”

Pileus somewhat fleshy, convexo-plane, obtuse, then depressed, moist, hygrophanous, at first clothed with silky evanescent scales, then naked; stem fistulose, flocculose, rigid, pallid; gills adnato-decurrent, rather distant, cinnamon coloured.—*Fr. Epicr. p.* 200. *Bull. t.* 593, *f.* 3. *Batsch. f.* 98. *Eng. Fl. v. p.* 98.

On chips, &c. Common. [Cincinnati.]

Spores .00022 in. long. Pileus $\frac{1}{2}$ -1 in. broad, subcarnose, at first convex, at length expanded, often umbilicate, rich umber, or cinnamon when moist; margin transparent, sprinkled, especially towards the margin, with white fibrillæ, or little branny scales, when dry white or reddish-tan; gills broad, subdecurrent, moderately distant, pale cinnamon. Stem 1-2 in. high, 1-2 lines thick, nearly equal, or slightly thickened at the base, flexuous, fistulose, fibrillose, or furfuraceous.—*M. J. B.*

388. Agaricus (Tubaria) autochthonus. B. & Br. “Ochrey-white Tubaria.”

Pileus obtuse, hemispherical, ochrey-white, silky, margin flocculose; stem slender, flexuous, incrassated above and below, whitish, woolly; gills horizontal, with a distinct adnate tooth, honey-coloured.—*B. & Br. Ann. N.H.* (1866), *no.* 1121.

On the naked soil. Woodnewton, Norths.

Pileus $\frac{1}{2}$ in. across; stem $\frac{3}{4}$ in. high, not half a line thick in the centre. Spores paler than in *A. furfuraceus*, .00019 inch long. It does not become pallid in drying, like that species, but is of an ochraceous white from the first.—*B. & Br.*

Series 4. **Pratellæ**, *Fr. Epicr. p.* 212.—Spores various shades of brownish purple, dark purple, or intense brown.

Sub-Gen. 26. **PSALLIOTA**, *Fr. Epicr. p.* 212.

Spores dark brownish-purple, dead brown, reddish-purple, pale slate, or pinkish; veil universal, concrete with the cuticle

of the pileus, and fixed to the stem, forming a ring; pileus fleshy; stem distinct from the hymenophore, furnished with a ring; gills free, and rounded behind, at first white, then pink, afterwards intense purple-brown. (*Pl. V., f. 26.*)

HAB. All the species are terrestrial, mostly growing in rich pastures and on manured ground.

Most of the species appear in the autumn, and several are valued for their esculent properties. *Psalliota* corresponds with *Lepiota*.

389. Agaricus (Psalliota) arvensis. *Schæff.* "Horse Mushroom."

Pileus fleshy, conico-campanulate, then expanded, at first floccoso-farinose, then nearly smooth, even, or cracked; stem hollow, with a floccose pith; ring pendulous, broad, double, the outer split in rays; gills free, broader in front, dirty white, then reddish-brown.—*Fr. Epicr. p. 213. Schæff. t. 310, 311. Paul. t. 134, f. 1-2. Smith, E.M. 9. Hogg & Johnst. t. 17. Vent. t. 15, f. 1-2. Berk. Outl. t. 10, f. 4. Huss. i. t. 76, 77. Badh. i. t. 6, f. 1. A. Georgii, Sow. t. 304. Eng. Fl. v. p. 105. A. edulis, Krombh. t. 23, f. 11-14, t. 26, f. 9-13. Tratt. essb. t. J. A. exquisitus, Vitt. Mang. t. 20.*

var. **villaticus.** *Brond.* Acquires a large size, and is very scaly.

In meadows, often in rings. Esculent. Suffolk.

Pileus 4-18 in. broad, white, stained with yellow, convex, very thick, firm and tough, quite smooth, or clothed with broad, tawny, more or less concentric, adpressed scales, flesh yellowish when cut, juice yellow; gills adnate, broad, numerous, white or very pale flesh colour, at length dark purplish brown. Stem 2-5 in. high, 1-2 in. thick, firm, the centre loose and web-like, when bruised yellow, especially below. Distinguished from *A. campestris* by the almost white gills (when young) and the yellow stains when bruised.—*M. J. B. Spores variable in size, average $\cdot 0004 \times \cdot 00025$ in.—W. G. S.*

390. Agaricus (Psalliota) campestris. *L.* "Common Mushroom."

Pileus fleshy, convexo-plane, dry, silky, floccose or squamulose; stem stuffed, even, white, ring medial, somewhat torn; gills free, approximate, ventricose, sub-deliquescent, flesh-coloured, then brown.—*Fr. Epicr. p. 213. Berk. Outl. t. 10, f. 2. Huss. 1, t. 90. Hogg & Johnst. t. 19. Cooke, B.F. t. 10. Smith, E.M. f. 5. Schæff. t. 33. Vent. t. 14, f. 4-7. Paul. t. 130. Sow. t. 305. Grev. t. 161. Vitt. Mang. t. 6-8. Krombh. t. 23, f. 1-8. Tratt. essb. t. K. Eng. Fl. v. p. 106. Gonn. & Rabh. iv. t. 1-2. Barla, t. 27. Price, f. 63. Badh. i. t. 4, 5, ii. t. 4, f. 3-5.*

In rich pastures. Common. Esculent. [United States.]

var. pratensis. Vitt. Distinguished by the small rufous scales of the pileus, and the flesh having a slight pink tinge. In pastures. Kings Cliffe. E. Bergholt.

var. silvicola. Vitt. Pileus smooth, shining; stem elongated, somewhat bulbous.—*Fr. Epicr.* p. 213. *Krombh.* t. 23, f. 8. *Paul.* t. 133.

In woods.

var. hortensis. Auct. Pileus fibrillose or squamulose, brownish. *var. elongatus,* Gard. Chron. 1860, p. 1061, fig. *var. Buchanani,* Gard. Chron. 1860, p. 1039, fig.

This is the cultivated form.

var. vaporarius. Otto. Pileus even, with a brown pilose coat, which also covers the stem and leaves transverse fragments thereon as it elongates.—*Krombh.* t. 26, f. 14, 15. *Paul.* t. 132. *Letell.* t. 659.

var. rufescens. Berk. A distinct variety, which is rufous, like *A. vaccinus*, and whose flesh turns of a bright red when bruised. The gills are at first perfectly white.—*Berk. Outl.* t. 10, f. 3.

Pileus 2-5 in. broad, at first convex, then plano-convex, white, silky, or clothed with reddish-brown, adpressed fibrillæ, collected into little fascicles, cuticle easily separating from the flesh, projecting beyond the gills and often curled back, fleshy; flesh firm, thick, white, more or less stained with reddish-brown, especially when bruised; gills very unequal, at first of a beautiful pink, free, obtuse, and sometimes forked behind, broad in the middle, at length dark, mottled with the brownish purple, minute, sub-elliptic spores, the edge white and minutely denticulate. Stem 2-3 in. high, $\frac{1}{2}$ – $\frac{3}{4}$ in. thick, nearly equal or sub-bulbous, white, beautifully but minutely silky, furnished with a thick spongy ring, generally above the middle, firm, when quite young there is a fine silky universal veil.—*M. J. B.* Spores $\cdot 00032 \times \cdot 0002$ in.—*W. G. S.* (*Pl. V.*, f. 26.)

391. *Agaricus (Psalliota) silvaticus.* Schæff. "Wood Psalliota."

Pileus fleshy, thin, campanulate, then expanded, gibbous, fibrillose or squamulose; stem hollow, unequal, whitish; gills free, crowded, rather thin, dry, reddish, then brown.—*Fr. Epicr.* p. 214. *Schæff.* t. 242. *Krombh.* t. 23, f. 9, 10. *Berk. Outl.* p. 167.

In woods.

[Cinnnati.]

Pileus brownish, smell strong. Stem longer and more slender than in *A. campestris*, 3 in. and more long, $\frac{1}{2}$ in. thick. Ring distant, variable. Pileus 3 in. broad, floccose, scaly, disc at length smooth, sub-ferruginous, scales rufescent or tawny; margin cracked. Spores $\cdot 00017 \times \cdot 00025$ in.

392. Agaricus (Psalliota) elvensis. *B. & Br.* "Tufted Psalliota."

Cæspitose. Pileus from sub-globose to hemispherical, fibrillose, broken up into large persistent brown scales, areolate in the centre, margin thick, covered with pyramidal warts; stem fibrillose below, ring very large, areolato-verrucose beneath; gills free, brownish flesh colour.—*B. & Br. Ann. N.H.* 1865, no. 1009.

Under oak trees. Sept. Bodelwyddan.

Pileus at first sub-globose, then hemispherical, 6 in. or more across, margin very obtuse; stem at first nearly equal, at length swollen in the centre, and attenuated at the base, 4 in. high, 2 in. thick in the centre, fibrillose and areolate below, nearly smooth within the pileus, solid, stuffed with delicate threads; ring thick, very large, deflexed, broken here and there; gills $\frac{1}{4}$ in. broad, free, of a brownish-flesh colour; flesh of pileus $\frac{3}{4}$ in. thick in centre, turning red when cut. Taste and smell excellent.—*B. & Br.*

Sub-Gen. 27. PILOSACE, Fr.

Agrees in structure with *Pluteus*, and has the hymenophore distinct from the ringless stem. There are no British representatives. (*Pl. V., fig 27.*)

Sub-Gen. 28. STROPHARIA, Fr. Monog. Hymen. i. p. 409.

Spores intense bright purple-brown, brown or slate-colour; veil, if present, universal, superficial, scaly, or viscid; stem confluent behind, and homogeneous with the hymenophore; gills not free, and rounded.

HAB. Terrestrial or epiphytal. (*Pl. V., f. 28.*)

Formerly included under *Psalliota*; but now separated by Fries on account of the different habit, different attachment of the gills, and other characters; the species, of which none are edible, have various habits, but most are epiphytal, as are the analogues. *Stropharia* corresponds with *Armillaria* and *Pholiota*.—*W. G. S.*

393. Agaricus (Stropharia) Jerdoni. *Berk.* "Jerdon's Stropharia."

Pileus campanulate, obtuse, umbonate, fleshy, ochraceous, dry, adorned with superficial white evanescent scales, cuticle not separating; stem silky or squamulose, hollow; ring superior; gills pallid, then brown, transversely striate.—*B. & Br. Ann. N.H.* no. 913, t. xiv. f. 2.

On fir stumps. Nov. Mossburnford.

Pileus 2 in., ochraceous (brown when dry), campanulate, obtuse, with a broad umbo, fleshy, minutely rivulose, adorned with superficial evanescent snow-white scales, cuticle not peeling off; stem 3 in., 2-3 lin. thick, cylindrical, snow-white, pulverulent above, brownish, with silky transverse scales below; ring superior, deflexed; gills adnate, sending a line down the stem, but not truly decurrent, pallid, then brown, transversely striate. Spores dark brown.—*M. J. B.*

394. Agaricus (Stropharia) versicolor. With.
 “Withering’s Stropharia.”

Pileus fleshy, convexo-plane, squamose, scales of the disc crowded; stem spongy, stuffed, bulbous, whitish, then brownish, ring persistent; gills decurrent, pallid, then reddish-brown.—*Fr. Epicr. p. 218. Berk. Outl. p. 167. Eng. Fl. v. p. 109.*

Pileus greenish brown. Not been found since the time of Withering. “Pileus 1-4 in. broad, scurfy especially in the centre, convex, at length flat, but the edge much curled in; gills decurrent; stem 2 in. high, as thick as a swan’s quill, thickest downwards.”—*With.*

395. Agaricus (Stropharia) æruginosus. Curt. “Livid Green Stropharia.”

Pileus fleshy, convexo-plane, subumbonate, clothed with green evanescent slime, becoming paler; stem hollow, equal, fibrillose or squamose below the ring, tinted with blue; gills adnate, soft, brown, tinged with purple.—*Fr. Epicr. p. 218. Curt. Fl. Lond. t. 309. Sow. t. 261. Krombh. t. 3, f. 27, 28, t. 62, f. 11, 14. Schæff. t. 1. Batsch. f. 218. Fl. Dan. t. 1248. Huss. i. t. 35. Eng. Fl. v. p. 109. Smith, P. M. f. 25. Price, f. 121.*

In meadows, &c. Common.

[S. Carolina.]

Gregarious; pileus 1-4 in. broad, convex, thin, expanded, fleshy, dull yellow, but covered with blue gluten, above this, but not always, clothed with pure white scales; gills purple-brown, or sometimes umber, plane, or very slightly ventricose, adnate with a small tooth, margin white, pulverulent; stem 2-3 in. high, 3-6 lines thick, penetrating into the soil by strong branched white fibres, straight or flexuous, sometimes bulbous, scaly; scales reflexed, at length more or less smooth, with various tints of blue, green, or yellow, at first stuffed, then hollow, various in stature, sometimes very short and thick, mottled longitudinally with blue within, the centre white; ring in general fugacious, smell disagreeable.—*M. J. B.* Spores $\cdot 00028 \times \cdot 0002$ in. There is a variety of this species with the pileus perfectly white from the first.
 (*Pl. V., fig. 28.*)

396. Agaricus (Stropharia) albo-cyaneus. Desm. “Blue and White Stropharia.”

Pileus fleshy, thin, umbonate, even, viscid, greenish, then whitish; stem hollow, thin, flexuose, even, whitish; ring in-

complete; gills attenuated, fixed, whitish flesh-colour, then brownish purple.—*Fr. Epicr. p.* 219. *Pers. M. E. t.* 29, *f.* 2, 3. *Ann. N. H. no.* 793.

In meadows and on dung. Oct. Nov.

Resembling *A. ceruginosus*, but more delicate and softer. Both sometimes occur together. It may possibly be only a variety. Stem about 2 in. long. Spores a different shade of colour from the last; $\cdot 00027 \times \cdot 00017$ in.

397. *Agaricus (Stropharia) obturatus.* *Fr.* "Compact *Stropharia.*"

Pileus rather compact, convex, then plane, obtuse, somewhat dry, at length cracked or squamulose; stem stuffed, short, somewhat attenuated downwards, white, as well as the tumid ring; gills adnate, plane, white, becoming purplish-umber.—*Fr. S. M. p.* 285. *Epicr. p.* 219. *Mon. Hym. i. p.* 412. *Paul. t.* 104. *f.* 6. *bis.*

On the ground. Gomshall. [W. G. S., etc.]

Stem firm, short, $1-1\frac{1}{2}$ in. long, 3 lin. and more thick, even, not squamose, white; ring superior, deflexed, white. Pileus fleshy, slightly viscid, usually dry, yellow; flesh compact, white; gills crowded.

398. *Agaricus (Stropharia) melaspermus.* *Bull.* "Black Spored *Stropharia.*"

Pileus fleshy, convexo-plane, obtuse, soft, even, smooth, rather viscid; stem hollow, equal, smooth, white, as also the membranaceous ring; gills slightly adnexed, ventricose, crowded, pallid, then violet-black.—*Fr. Epicr. p.* 219. *Bull. t.* 540, *f.* 1. *Schæff. t.* 51. *Berk. Outl. p.* 168.

In meadows and woods. Rare.

Somewhat resembling *A. præcox*, but with different coloured spores and gills.—*M. J. B.*

399. *Agaricus (Stropharia) squamosus.* *Fr.* "Scaly *Stropharia.*"

Pileus fleshy, thin, convexo-plane, subviscid, sprinkled with superficial concentric scales; stem subfistulose, slender, below the distant ring villosu-squamose; gills adnate, crowded, blackish, with a whitish edge.—*Fr. Epicr. p.* 220. *Fl. Dan. t.* 2077, *f.* 1, 2. *Berk. Outl. t.* 10, *f.* 6. *Eng. Fl. v. p.* 31*.

In woods.

Pileus 1 in. or more broad, at length nearly plane, obtuse, slightly viscid, shining when dry, ochre tinged with red-lead, clothed with concentric, yellowish, scattered scales; gills broad, clouded with olive-black or purplish-brown; stem 3 in. or more high, 2 lines thick, with a white pith, at length

hollow, furnished half-way up with a sub-erect ring, above which it is white and pulverulent, below ferruginous and villososquamoso, strigose at the slightly incrassated base.—*M. J. B.* Spores 00042×00027 in. There is a variety of this species with a chestnut-brown pileus, which is smooth from the first.

400. Agaricus (Stropharia) stercorarius. *Fr.* "Dung Stropharia."

Pileus rather fleshy, hemispherical, then expanded, even, smooth, discoid; stem stuffed, elongated, at first flocculose below the distant ring, with a distinct pith, subviscid; gills adnate, broad, white, umber, then olive-black.—*Fr. Epicr. p.* 220. *Ann. N. H. no.* 688. *Bull. t.* 566, *f.* 4. (*not Eng. Fl. v. p.* 111.)

On dung.

Distinguished from *A. semiglobatus* by the distinct medullary substance with which the stem is stuffed; stem 3 in. and more long, 2-3 lin. thick, yellow; pileus about an inch broad, yellowish; spores unusually large, even for a dung-born agaric, 00067×00053 in.

401. Agaricus (Stropharia) semiglobatus. *Batsch.* "Semi-globose Stropharia."

Pileus somewhat fleshy, hemispherical, even; stem fistulose, slender, straight, smooth, glutinous, yellowish; veil abrupt; gills adnate, broad, plane, clouded with black.—*Fr. Epicr. p.* 220. *Batsch. f.* 110. *Grev. t.* 344. *Huss. i. t.* 39. *Eng. Fl. v. p.* 108.

On dung. Common.

[United States.]

Pileus $\frac{1}{2}$ -1 in. or more broad, hemispherical, yellow, or slightly mottled from the shining through of the gills, viscid when moist, shining and smooth when dry, obtuse, fleshy, flesh white beneath the cuticle, umber near the gills; gills very broad, adnate with a little tooth, ventricose or plane, mottled with the purple-brown spores, with at length a cinereous, sometimes a yellow tinge; stem 2-3 in. high, $1-1\frac{1}{2}$ line thick, very viscid, shining when dry with a closely glued silkiness, fistulose; ring more or less perfect, deflexed.—*M. J. B.* Spores 00054×00034 in.

Sub-Gen. 29. **HYPHOLOMA**, *Fr. S. M. i. p.* 287.

Spores brownish-purple, sometimes intense purple, almost black; veil woven into a spidery fugacious web which adheres to the margin of the pileus, v. (not properly ring-shaped round the stem); pileus with an inseparable pellicle; stem confluent and homogeneous with the hymenophore.

HAB. Generally stumps.

(*Pl. V., fig.* 29.)

Most of the species are gregarious and not edible. *Hypholoma* corresponds with *Tricholoma*, *Entoloma*, and *Hebeloma*.

A. Fasciculares.

402. Agaricus (Hypholoma) sublateritius. Fr. "Brick-red Hypholoma."

Pileus fleshy, convexo-plane, obtuse, discoid, dry, at length smooth; flesh compact, whitish; stem stuffed, fibrillose, attenuated downwards, ferruginous; gills adnate, crowded, white, then dingy-olive.—*Fr. Epicr. p. 221. Schæff. t. 49, f. 6, 7. Krombh. t. 44, f. 1-3. Hedn. Cryp. t. 38. Huss. i. t. 60. Ag. lateritius. Eng. Fl. v. p. 110. Smith. P. M. f. 22.*

On old stumps. Common. [United States.]

Gregarious, caespitose; pileus 2-3 in. or more broad, fleshy, always very obtuse, not conic, at length expanded, ochraceous, tawny in the centre, paler at the margin, where it is slightly silky, when young it is silky all over. Veil stained with the spores, adhering in fragments to the margin; gills rounded behind, adnate with a tooth, scarcely green, clouded with the spores, margin uneven; stem 3 in. or more high, 2-3 lines thick, often thickest below, stuffed, yellow, with a more or less rufescent tinge, silky when young, distinctly squamulose, or fibrillose, firm, at length fistulose; spores elliptic, brown-purple, but not with a ferruginous tint; taste bitter and nauseous; sometimes rather difficult to distinguish from *A. fascicularis*.—*M. J. B.* Spores 0002×00012 in.

403. Agaricus (Hypholoma) capnoides. Fr. "Fir Wood Hypholoma."

Pileus fleshy, convexo-plane, obtuse, dry, very smooth; flesh thin, white; stem nearly hollow, equal, even, silky, pallid; gills adnate, scarcely crowded, broad, dry, smoky-grey, then purplish.—*Fr. Epicr. p. 222. B. & Br. Ann. N. H. no. 913*.*

In fir woods. April. Apethorpe.

Odour and taste mild; pileus of one colour, usually yellowish, 1-3 in. broad; stem 2-3 in. long, 2-4 lin. thick, equal, curved and flexuous, pallid, whitish above.

404. Agaricus (Hypholoma) epixanthus. Fr. "Grey-gilled Hypholoma."

Pileus fleshy, thin, convexo-plane, somewhat gibbous, even, silky, at length smooth, flesh yellow; stem hollow, subequal, floccoso-fibrillose, whitish, pruinose at the apex, brownish at the base; gills adnate, crowded, whitish-yellow, at length cinereous.—*Fr. Epicr. p. 222. Paul. t. 107. Batt. t. 23, D.?*

On old fir stumps. Mossburnford. Lea.

Easily known by the absence of the bitter taste and cinereous tint of the gills; stem about 3 in. long, 3-4 lin. thick, pale, ferruginous, or tawny at the base, pruinose above; pileus 2-3 in. broad, yellow or pallid, the disc usually darker.

- 405. Agaricus (Hypholoma) fascicularis.** *Hud.* "Tufted yellow Hypholoma."

Pileus fleshy, thin, subumbonate, smooth; stem hollow, thin, fibrillose, flexuose, flesh yellow; gills adnate, much crowded, linear, subdeliquescent, sulphur-coloured, then greenish.—*Fr. Epicr. p.* 222. *Bolt. t.* 29. *Sow. t.* 225. *Fl. Dan. t.* 2075. *Krombh. t.* 44, *f.* 4-5. *Paul. t.* 107. *Vent. t.* 58, *f.* 3. *Berk. Outl. t.* 11, *f.* 1. *Huss. ii. t.* 15. *Eng. Fl. v. p.* 111. *Smith. P.M. i. Gard. Chron.* 1860, *p.* 337, *fig.*

On old stumps, &c. Common.

[United States.]

Gregarious, densely cæspitose. Pileus 2-in. broad, at first conic, then expanded, more or less irregular from the tufted mode of growth, subcarnose, thick in the centre, tawny, margin thin, yellow, with portions of the veil adhering to it, often stained with the ferruginous-purple spores. Gills green, clouded, adnate with a subdecurrent tooth. Stem 2-9 in. high, 2 lines thick, curved and unequal, hollow, fibrillose or squamulose, yellow-greenish above. Ring stained with the spores. Taste bitter and nauseous.—*M. J. B.* Gills separating from the hymenophore. Spores 00025×00016 in.

- 406. Agaricus (Hypholoma) dispersus.** *Fr.* "Dispersed Hypholoma."

Pileus somewhat fleshy, campanulate, then expanded, obtuse, even, margin silky from the veil; stem subfistulose, thin, tough, fibrillose or silky, base brownish; gills adnate, thin, subventricose, crowded, pallid straw colour, then clouded.—*Fr. Epicr. p.* 222. *Ann. N.H. no.* 794.

On stumps, and on the ground, in pine woods.

Either scattered or fasciculate. Pileus $1\frac{1}{4}$ in. broad, honey-brown. Stem straight, 2-3 in. long, sometimes 6-7 in., for the greater part ferruginous, the apex pale.

B. *Velutini.*

- 407. Agaricus (Hypholoma) lacrymabundus.** *Fr.* "Weeping Hypholoma."

Pileus fleshy, campanulate, then convex, spotted with innate pilose scales; flesh white; stem hollow, fibrilloso-squamose, rather thickened at the base, white; gills adnate, seceding, white, then brown purple.—*Fr. Epicr. p.* 223. *Bull. t.* 194.

On trunks and on the ground. July—Nov.

Pileus not hygrophanous, 2-4 in. broad, at first somewhat campanulate, at length expanded, fleshy, margin thin, with a few fragments of the veil attached, firm, pale reddish brown, darker in the centre, fibrilloso-squamulose; flesh pale umber; gills at first pale, then reddish brown, sub-ventricose towards the base, slightly attached. Stem 2-3 in. high, 3 lines or more thick,

pale umber towards the base, whitish above, subincrassated below, subflexuous, fibrillose or squamuloso-fibrillose from the remains of the floccose ring, above squamuloso-pubescent, truly fistulose, the inside downy, firm, elastic, pale umber within. Odour disagreeable.—*M. J. B.* Spores almost black, $\cdot 0003 \times \cdot 0002$ in. (*Pl. V., f. 29.*)

408. Agaricus (Hypholoma) velutinus. *P.* "Velvety Hypholoma."

Pileus rather fleshy, ovate, then expanded, gibbous, fibrillose or velvety, becoming smooth, hygrophaneous, flesh yellowish; stem hollow, equal, fibrillose-striate, mealy above, yellowish; gills truncato-adnexed, ventricose, scarcely crowded, brown, then umber, studded with drops of moisture.—*Fr. Epicr. p. 224. Bull. t. 525. f. 3. Holms. ii. t. 35. Berk. Outl. t. 11, f. 2. Paul. t. 55. f. 1. Schæff. t. 84, var.*

On stumps. Common.

var. β. leiocephalus. B. & Br.

Pileus hygrophaneous, rugged, smooth, except at the margin, where it is fibrillose, pallid, as is the stem, whose apex is farinose.—*B. & Br. Ann. N.H. 1865, no. 1009*.*

On old stumps. Sept. Bodelwyddan.

Densely caespitose, much smaller than the common form, but apparently a mere variety, though a very striking one, from its smooth, but very rugged disc.—*M. J. B.*

C. Appendiculati.

409. Agaricus (Hypholoma) Candollianus. *Fr.* "Candolle's Hypholoma."

Pileus somewhat fleshy, campanulate or convex, then expanded, obtuse, smooth, hygrophaneous; stem hollow, fragile, subfibrillose, white, apex striate; gills rounded behind, adnexed, crowded, violet, then brownish cinnamon.—*Fr. Epicr. p. 224. Fl. Dan. t. 774. Eng. Fl. v. p. 113.*

On dead stumps. Rare.

Pileus whitish, ochraceous in the centre, 2-4 in. broad. Stem 3 in. long, 2-4 lines thick, solid at the base.

410. Agaricus (Hypholoma) lanaripes. *Cooke.* "Woolly-stemmed Hypholoma."

Pileus somewhat fleshy, campanulate, then expanded, hygrophaneous, squamose with superficial scales arising from the breaking up of the cuticle, pallid; veil attached in fugacious

patches; stem hollow, fragile, subfibrillose, white, tomentose at the base; gills crowded, reaching the stem, whitish, then purplish brown.—*Seem. Journ.* (1863), p. 66, t. 3, f. 2.

On the soil in conservatories.

Subcæspitose. Pileus $1\frac{1}{2}$ -3 in., rather fleshy, margin thin, pallid, disc often tawny or brownish, margin purplish, with a shade of pink derived from the dark gills beneath, the whole plant becoming dark brown on decay. Stem 2-3 in., white, with radiating white hairs at the base. Gills reaching the stem, not ventricose. (*Pl. I., fig. 3.*)

411. Agaricus (Hypholoma) appendiculatus. *Bull.* "Appendiculate Hypholoma."

Pileus between fleshy and membranaceous, ovate, then expanded; when dry rugose, and sprinked with atoms; stem fistulose, equal, smooth, white, pruinose above; gills subadnate, crowded, dry, whitish, then rosy brown.—*Fr. Epicr.* p. 224. *Bull.* t. 392. *Sow. t.* 324. *Berk. Outl.* t. 11, f. 3-4.

On dead stumps. Common.

Pileus tawny or pale ochre, 2-3 in. broad. Veil attached in patches to the margin. Stem 3 in. long, 2-3 lin. thick. Spores 00015×0002 in.

412. Agaricus (Hypholoma) egenulus. *Berk.* "White Hypholoma."

Solitary. Pileus hemispherical, then expanded, whitish, then snowy-white, umbonate, appendiculate; stem minutely adpresso-squamulose, fistulose; gills adnate with a tooth, purplish-umber.—*B. & Br. Ann. N.H.* no. 915.

On the ground, amongst grass. May. Apethorpe.

Solitary. Pileus $1\frac{1}{2}$ in. across, hemispherical, expanded, umbonate, but not decidedly rugose or atomate, of a watery white, when dry snow-white, quite smooth as if delicately gummed, even, except towards the edge, margin finely striate, appendiculate; stem 2 in. high, $1\frac{1}{2}$ line thick, attenuated upwards, or nearly equal, minutely adpresso-squamulose, fistulose; gills purplish-umber, with a white edge, moderately distant, slightly ventricose, adnate with a tooth. Spores brown-purple.

413. Agaricus (Hypholoma) hydrophilus. *Bull.* "Watery Hypholoma."

Pileus fleshy-membranaceous, convex, then expanded, subrepand, smooth, hygrophane, rugose, disc even, margin rather broken; stem fistulose, curved, closely fibrillose, growing pale; gills adnexed, ventricose, crowded, dripping, pallid, then brownish-cinnamon or bay.—*Bull.* t. 511. *Paul.* t. 110, f. 1. *Fr. Epicr.* p. 225. *B. & Br. Ann. N.H.* (1866), no. 1126. *A. stipatus.* *Eng. Fl.* v. p. 113, partly.

In woods. Oct.

The veil, though fugacious, at once distinguishes it from other species, with which it might easily be confounded. Pileus when fresh usually bay, when dry tawny, about $1\frac{1}{2}$ in. broad, flesh whitish. Stem 2 in. long, 1-2 lin. thick, at first white, then becoming ferruginous, slightly mealy above.

Sub-Gen. 30. PSILOCYBE, Fr. S. M. i. p. 289.

Spores purple, purple-brown, or slate-colour; veil obsolete (or in a few species fugacious, when present not forming a ring); pileus glabrous, at first incurved; stem cartilaginous, ringless, confluent with but heterogeneous from the hymenophore.

HAB. All grow on the ground. (*Pl. V.*, f. 30.)

The species are almost all gregarious, cæspitose, inodorous, with fugitive colouring, and not edible. Fries divides the sub-genus into two groups, the *tenacious* and the *fragile*. *Psilocybe* corresponds with *Collybia*, *Leptonia*, and *Naucoria*.

A. *Tenaces*—pileus pelliculose.

414. *Agaricus (Psilocybe) areolatus*. Klotsch. "Patchy *Psilocybe*."

Pileus somewhat fleshy, convex, clothed with minute fibrils; cuticle cracking into nearly square patches; stem fistulose, fibrillose, dirty white; gills adnate, umber, at length black; edge white.—*Berk. Outl. p. 172, no. 336. Eng. Fl. v. p. 112.*

In gardens. May—Oct. Glasgow.

Pileus ochraceous or brown, $1\frac{1}{2}$ -3 in. broad, convex, veil between fibrous and membranaceous, fugacious; gills 2-3 lines broad, the edge white, and beaded with drops of moisture. Stem 2-3 in. high, 3 lines thick, generally thickened at the base, fibrillose, dirty white.—*Klotsch. Spores 00055 X 00034 in.*

415. *Agaricus (Psilocybe) comptulus*. B. & Br. "Sprinkled *Psilocybe*."

Pileus between conic and campanulate, at length expanded, pallid, then pallid ochraceous, striate; margin sub-crenulate; stem flexuose, shining, silky, smooth; gills distant, ventricose, adnate, and rosy-umber.—*B. & Br. Ann. N.H. no. 917, t. 14, f. 4.*

In woods, amongst grass. Oct. Collyweston.

Pileus $1-1\frac{1}{2}$ in., between conical and campanulate, at length expanded, pallid, acquiring a pallid ochraceous tint as it loses its moisture, sprinkled with shining particles, scarcely rugulose, striate; margin somewhat crenulate, at first inflexed; stem 2 in. high, $1-1\frac{1}{2}$ line thick, flexuose, undulate, smooth, but with a shining, silky aspect, not striate above, below acquiring a very pale rufous tinge; gills distant, ventricose, broad, adnate, umber, with a rosy tinge. Spores umber-brown.—*B. & Br.*

416. *Agaricus (Psilocybe) ericæus.* Pers. "Heath Psilocybe."

Pileus fleshy, tough, conical, then convex, at length plane, even, smooth, rather viscid when moist, shining when dry; stem somewhat hollow, elongated, tough, pallid; gills adnate, broad, plane, pallid, then black.—*Pers. Syn. p.* 413. *Fr. Epicr. p.* 228. *Berk. Ann. N.H. no.* 149.

In exposed pastures, after rain. July—Oct.

Stem firm, 3-4 in. long, yellowish, or pallid. Pileus scarcely umbonate, 1 in. and more across. Gills rather distant, margin becoming whitish.—*Fries.*

Omitted from Berkeley's "Outlines" by oversight.

417. *Agaricus (Psilocybe) semilanceatus.* Fr. "Liberty-cap Psilocybe."

Pileus submembranaceous, acutely conical, almost cuspidate, moist, viscid, slightly striate; stem medullate, tough, flexuose, smooth, pallid; gills adnexed, ascending, purple-black.—*Fr. Epicr. p.* 231. *Sow. t.* 240, *f.* 1-3. *A. callosus.* *Eng. Fl. v. p.* 111.

In rich pastures. Common. Poisonous.

Pileus $\frac{3}{4}$ in. broad, $\frac{4}{5}$ high, conico-campanulate, apiculato-umbonate, viscid when moist, shining when dry, pale ochraceous, the margin darker from its transparency, flesh thick in the centre; gills ventricose, adnate, chocolate-coloured, extreme margin white. Stem 4 in. high, slender, flexuous, nearly equal, thickened at the very base, subrufescent, fibrillose below, pulverulento-squamulose above, fistulose, base sometimes clothed with blue down.—*M.J.B.* Spores $\cdot 0005 \times \cdot 0003$ in.

B. *Fragiles.***418. *Agaricus (Psilocybe) spadiceus.* Schæff. "Bay Psilocybe."**

Rigid; pileus fleshy, convexo-plane, obtuse, even, moist, hygrophanous; stem hollow, tough, pallid, apex even; gills rounded behind, adnexed, dry, crowded, whitish, then rosy-brown.—*Fr. Epicr. p.* 226. *Schæff. t.* 60, *f.* 4, 6. *Buxb. iv. t.* 29, *f.* 2, *var.* *A. stipalus.* *Eng. Fl. v. p.* 113, *partly.*

On dead stumps, ground, &c., in woods. Common.

Subcæspitose. Usually of a bright bay-brown, paler when dry. Stem 3-4 in. long, whitish. Pileus 3-4 in. broad, even, smooth. Spores $\cdot 0003 \times \cdot 0002$ in. [*Pl. V., f.* 30.]

419. *Agaricus (Psilocybe) cernuus.* Müll. "Nodding Psilocybe."

Pileus somewhat fleshy, campanulate, convex, then expanded, smooth, hygrophanous, wrinkled when dry; stem fistulose, flexuose,

smooth, white, apex even, pruinose ; gills adnate, subventricose, scarcely crowded, whitish-cinereous, then brownish-black.—*Fr. Epicr. p. 226. Schæff. t. 205. Paul. t. 110, f. 3. Fl. Dan. t. 1008 (not Eng. Fl. v. p. 114).*

On chips, decayed wood, &c. Dec. Apethorpe.

Pileus pallid, 1-2½ in. broad, veil absent. Stem hollow, 2 in. and more long, about 2 lines thick, whitish. Spores .0003 × .0002 in.

420. Agaricus (Psilocybe) clivensis. *Berk.* "Pallid Psilocybe."

Pileus subhemispherical, pallid brown, then whitish ochre, even, atomate, margin striate ; stem equal, somewhat silky ; gills adnate, broadly emarginate, horizontal, umber.—*B. & Br. Ann. N.H. no. 916, t. xiv. f. 3.*

On the ground. Oct. King's Cliffe.

Pileus 1 in. across, subhemispherical, at first pallid brown, then pallid ochre inclining to white, even, sprinkled with shining particles ; margin striated, not straight ; stem 1½ in. high, 1 line thick, fistulose, nearly equal, except at the very base, where it is slightly clavate, somewhat silky ; gills broad, adnate, widely emarginate, ventricose in front, rather distant, umber, margin white. Spores umber.—*B. & Br.*

421. Agaricus (Psilocybe) fœnisecii. *P.* "Brown Psilocybe."

Pileus somewhat fleshy, campanulate, then expanded, obtuse, dry, becoming dry ; stem fistulose, not rooting, pallid-rufous, even, smooth ; gills adnate, ventricose (as if broadly emarginate), scarcely crowded, brownish umber.—*Fr. Epicr. p. 227. Pers. Ic. & Des. t. 11. f. 1. Buxb. iv. t. 28, f. 1. Berk. Outl. t. 11. f. 5. Huss. i. t. 39. Eng. Fl. v. p. 112.*

Amongst grass in fields and gardens. Common.

[United States.]

Gregarious. Pileus 1-2 in. broad, hemispherical, or campanulate, brown umber, margin transparent, and minutely rugose, banded with various tints when losing its moisture ; in decay it has a burnt appearance, and at length dries up and is black. Gills distant, broad, ventricose, attached, umber, mottled, extreme margin white. Stem 2-3 in. high, 1½ line thick, subflexuous, fistulose, at first slightly pulverulent, umber, apex striate, base cottony.—*M. J. B.* Spores with an obscure apiculus at one end, .0004 × .00025 in.

Sub-Gen. 31. PSATHYRA. *Fr. Epicr. p. 231.*

Spores dark purple-brown, approaching slate-colour ; veil universal, fibrous, or absent, not forming a ring ; pileus submembranaceous, conical or campanulate, margin at first straight and

adpressed to the stem; stem fistulose, ringless, cartilaginous, fragile, confluent with but heterogeneous from the hymenophore.

HAB. On the ground or rotten wood. (*Pl. V.*, f. 31.)

All are slender and hygrophanous, with fugitive colouring, and closely allied to the *fragile* species of the last subgenus. *Psathyra* agrees with *Mycena*, *Nolanea*, *Galera*, *Psathyrella*.

Sect. 1. *Conopili*.

422. *Agaricus (Psathyra) conopilus*. P. "Silvery *Psathyra*."

Pileus submembranaceous, campanulate, even, smooth, growing pale; stem tall, attenuated upwards, smooth, silvery-shining; gills slightly adnexed, crowded, brownish purple.—*Fr. Epicr.* p. 231. *Jungh. Linn.* v. t. 6, f. 11.

In gardens. Rare.

Stem 4-6 in. long, 1-2 lines thick. Pileus dirty white at first, 2 in. broad.

423. *Agaricus (Psathyra) mastiger*. Berk. & Br. "Peaked *Psathyra*."

Pileus conico-campanulate, repand, dark brown, then tan-coloured; stem straight, attenuated upwards; gills ascending, fixed, umber.—*B. & Br. Ann. N.H.* no. 921, t. xiv, f. 6.

On the roadside, amongst grass. Sept. Apethorpe.

Pileus about 1 in. across, at first nearly cylindrical, obtuse, then conico-campanulate, with a strong mammiform umbo, repand, dark rich brown when moist, umber tan when dry, somewhat fleshy, not striate; margin straight; stem 3 in. or more high, $1\frac{1}{2}$ -2 lines thick, attenuated upwards, white, smooth, or fibrillose and furfuraceous, fistulose, pale umber within, and as the plant dries, acquiring the tint of the pileus, but pale; veil none; gills umber, paler on the edge, rather narrow, affixed, ascending.—*B. & Br.*

424. *Agaricus (Psathyra) corrugis*. P. "Wrinkled *Psathyra*."

Pileus submembranaceous, campanulate, umbonate, somewhat wrinkled, smooth, growing pale; stem elongated, equal, smooth, white; gills sinuate, fixed, ventricose, violet, black.—*Fr. Epicr.* p. 231. *Holms.* ii. t. 32. *Eng. Fl.* v. p. 115.

In pastures.

var. β . *gracilis*. Fr.—*Bull.* t. 561, f. 1. *B. & Br. Ann. N.H.* (1866), no. 1126*.

On the ground. Aug. Woodnewton.

Pileus lin. or more broad, turning pale, when dry corrugated; gills broad; stem 2-4 in. high, 1-2 lines thick, smooth, hairy at the base.—*Fries*. Spores 0.0005×0.0003 in. (*Pl. V. fig. 31.*)

425. Agaricus (Psathyra) bifrons. *Berk.* "Changing Psathyra."

Pileus submembranaceous, campanulate, obtuse, ochraceous brown, tinged with red, turning pale-tan; stem straight, naked; gills pinkish-cinereous, adnate; margin white.—*Berk. Eng. Fl. v. p. 114. Berk. Outl. p. 173.*

In ditches. Sept. Rare.

Pileus $\frac{3}{4}$ in. broad, furnished at first with a minute fibrillose, very evanescent veil, rugulose, ochraceous-brown, more or less tinged with red, margin thin, transparent; gills adnate, moderately broad, cinereous, shaded with pink, margin white, composed of minute wavy teeth; stem $2\frac{1}{2}$ in. high, 1 line thick, filiform, thickest at the base, beautifully but very minutely satiny, not pulverulent, very brittle.—*M. J. B.*

Sect. 2. Obtusati.

426. Agaricus (Psathyra) spadiceo-griseus. *Schæff.* "Bay-grey Psathyra."

Pileus submembranaceous, conical, then campanulate, expanded, sub-umbonate, smooth, striate to the middle, hygrophanous; stem firm, attenuated upwards, shining, white, striate at the apex; gills adnexed, rather crowded, brown.—*Fr. Epicr. p. 232. Schæff. t. 237. Fl. Dan. t. 1673, f. 2. A. stipatus, Eng. Fl. v. p. 113. partly.*

On chips, &c.

Subcæspitose. Pileus bright brown, 2 in. and more broad. Gills pale umber at first. Stem umber within, about 3 in. long, whitish and shining, striate above.

427. Agaricus (Psathyra) obtusatus. *Fr.* "Obtuse Psathyra."

Pileus submembranaceous, conical, campanulate, then expanded, obtuse, smooth, wrinkled, hygrophanous, rather shining; stem somewhat rigid, equal, even, nearly naked, pallid; incurved at the base; gills adnate, sub-ventricose, pallid, then umber.—*Fr. Epicr. p. 232. Schæff. t. 60, f. 1-3. Vaill. t. 12, f. 5, 6. Ann. N.H. no. 918.*

On oak trunks and on the ground.

Solitary or cæspitose. Stem rooting, 2-3 in. long, 1-2 lines thick. Pileus umber, paler at the margin, 1 in. and more broad.

428. Agaricus (Psathyra) fibrillosus. *P.* "Fibrillose Psathyra."

Pileus sub-membranaceous, campanulato-convex, then expanded, slightly striate, at first fibrillose; stem elongated, very fragile, white, fibrilloso-squamose; gills adnate, plane, very broad behind, purplish-black.—*Fr. Epicr. p.* 232. *Eng. Fl. v. p.* 113.

On the ground, in woods. Rare.

Pileus when moist livid, sub-striate; when dry white, not striate, often fibrilloso-squamose; stem 3 in. high, 2-3 lines thick, beset with villous fasciculated scales.—*Fries.*

429. Agaricus (Psathyra) urticæcola. *Berk. & Br.* "Nettle-root Psathyra."

Pileus campanulate, margin striate; stem fistulose, attenuated upwards, flocculent from the first, white; gills ventricose in front, attenuated behind, white, then chocolate colour.—*B. & Br. Ann. N.H. no.* 919.

On nettle roots. Aug. King's Cliffe.

Pileus 2 lines across, campanulate, flocculent, white; margin at length straight, striate; stem short, slender, attenuated upwards, flocculent, fistulose, springing immediately from the matrix; gills ventricose in front, attenuated behind, adnexed, at first white, then of a rich chocolate.—*B. & Br.*

430. Agaricus (Psathyra) pennatus. *Fr.* "Scaly Psathyra."

Pileus submembranaceous, campanulate, obtuse, even, at first clad with white scales, then naked; stem villous, silvery, pulverulent above; gills adnexed, crowded, broad, livid, then brownish-black.—*Fr. Epicr. p.* 234. *Sys. Myc. i. p.* 297. *B. & Br. Ann. N.H. (1865), no.* 1010.

On naked soil in gardens. King's Cliffe, occasionally, but never in any abundance.

Stem 1-1½ in. long, 1-2 lin. thick, equal, villous, at the apex sprinkled with whitish meal, silvery. Pileus ½ in. high and broad, at length expanded to an inch in breadth, not striate, at first densely clothed with whitish scales, at length naked.

431. Agaricus (Psathyra) gossypinus. *Fr.* "Cottony Psathyra."

Pileus submembranaceous, campanulate, then expanded, tomentose, becoming smooth; margin striate; stem tomentose, whitish;

gills adnexed, ventricose, white, then brownish-black.—*Fr. Epicr. p. 234. Bolt. t. 71, f. 1.*

In woods on the ground. Rare.

Subcæspitose, fragile, pale ochraceous ; gills livid, then brown.

432. Agaricus (Psathyra) semivestitus. *Berk. & Br. "Half-clothed Psathyra."*

Pileus ovate, obtuse, brown, growing pale, even, sprinkled with short snowy fibrils ; stem fibrillose, silky, white ; gills ascending, adnate, umber.—*B. & Br. Ann. N.H. no. 920, t. xiv., f. 5.*

Amongst grass in rich pastures. Oct. King's Cliffe.

Pileus about $\frac{1}{2}$ in. across, ovate, obtuse, dark brown, turning pale, sprinkled with little fibrils more than half-way up ; not striate ; stem nearly straight, 2 in. high, $1\frac{1}{2}$ line thick, fibrilloso-silky, rather strong, white, with a pale under tinge of brown, fistulose, the walls within white with down ; gills ascending, broad behind, adnate, umber-brown, tinged with the dark spores.—*B. & Br.*

433. Agaricus (Psathyra) Gordoni. *Berk. "Gordon's Psathyra."*

Cæspitose ; pileus campanulate, pallid cinereous, then whitish, more or less floccoso-squamulose, sulcato-striate ; stem flexuose, floccose, becoming smooth, whitish pruinose above ; gills ascending, narrowly adnate, distant, cinereous.—*B. & Br. Ann. N.H. no. 922, t. xv. f. 7.*

On old stumps. Oct. Overton Longueville.

Densely cæspitose. Pileus $1\frac{1}{2}$ in. across, campanulate, membranaceous, at first pale cinereous, then white, sprinkled with white floccose scales, sulcato-striate ; stem 2 in. high, $1\frac{1}{2}$ line thick, transversely undulated, pruinose above, floccose below, but becoming at length smooth and shining, brittle, fistulose ; gills ascending, narrowly adnate, distant, moderately broad, scarcely ventricose, cinereous. Smell faint, nauseous. When young wholly covered with white flocci.—*B. & Br.*

Sub-Gen. 32. DECONICA, Smith. Seem. Jour. 1870.

(*Psilocybe*, *Fr. Epicr. partly.*)

Pileus thin, plane, at first incurved, veil obsolete, or adhering to the margin of the pileus, not forming a ring ; stem cartilaginous, hollow, confluent with, but heterogeneous from, the hymenophore ; gills decurrent. (*Pl. V., fig. 32.*)

This sub-genus is analogous with *Omphalia*, *Eccilia*, and *Tubaria*.

434. Agaricus (Deconica) coprophilus. Bull. "Dung Deconica."

Pileus somewhat fleshy, hemispherical, then expanded, umbonate, even; stem subfistulose, attenuated above, pruinose, becoming smooth; gills arcuate, sub-decurrent, broad, livid-brown. *Fr. Epicr. p. 229. Bull. t. 566, f. 3. Ann. N.H. no. 689.*

On dung. Rare.

Pileus when very young white and downy, sub-hemispherical, clothed with little white superficial scales, brown, at length smooth and pale umber, darker at the obtuse apex, slightly fleshy. Stem flexuous, slightly attenuated upwards, whitish, shining, at first scaly, like the pileus, within which it is pruinose. Gills nearly plane, ventricose, adnato-arcuate or sub-decurrent, umber brown.—*M. J. B.*

435. Agaricus (Deconica) bullaceus. Bull. "Mottled-gilled Deconica."

Pileus somewhat fleshy, hemispherical, then expanded, smooth, at length umbonate, striate to the middle; stem fistulose, short, equal, fibrillose; gills adnate, triangular, plane, crowded, ferruginous-brown.—*Fr. Epicr. p. 229 (not Eng. Fl. v. p. 114). Bull. t. 566, f. 2. A. stercorarius. Eng. Fl. v. p. 111. Krombh. t. 3, f. 33, 34.*

On horse dung.

Pileus $\frac{1}{2}$ -1 in. broad, sub-carnose, sub-umbonate, umber, almost tawny, slightly viscid, moist, shining, quite smooth, even; in infancy flat, then hemispherical, when old quite plane, the margin transparent, slightly notched; when dry pale. Gills umber, mottled with the brown-purple spores, broad, plane, with a decurrent tooth, or ventricose and emarginate. Stem $1\frac{1}{2}$ -2 in. high, 1 line thick, umber, tough, flexuous, below squamuloso-fibrillose, with a little down at the base, above shining, but minutely pubescent, striate with the decurrent teeth of the gills, fistulose, but with a few fibrils within, flesh dark umber; when young there is a narrow ring.—*M. J. B.* Spores with an obscure apiculus at both ends, 0004×00028 in.—*W. G. S.*

436. Agaricus (Deconica) physaloides. Bull. "Dung Deconica."

Pileus somewhat fleshy, campanulate, then expanded, even, rather viscid; stem fistulose, flexile, closely fibrillose, bright brown at the base; gills decurrent, crowded, sub-ferruginous.—*Fr. Epicr. p. 229. Bull. t. 366, f. 1. Paul. t. 122, f. 5. var. Gard. Chron. Sept. 25, 1852. Ann. N.H. no. 690.*

On dung, in mossy places, &c.

Spores 0005 in. long, 0003 in. broad. Pileus 3-4 lin. broad, purplish-brown, paler about the margin, at length umbonate, and depressed round the umbo. Spores 00034×0002 in. [*Pl. V., f. 32.*]

Series V. **Coprinarii.** Fr. *Epicr.* p. 234. Spores black.

Psathyrella is very close to *Coprinus*, more so than *Panæolus*. In the *Coprinarii* the unrepresented spaces are very numerous.

Sub-Gen. 33. **PANÆOLUS**, Fr. *Epicr.* 234.

Veil, when present, interwoven, sometimes wanting; spores black, oval, smooth lemon-shaped, or echinulate; pileus somewhat fleshy, viscid when moist, shining when dry, *never striated*, the *margin exceeding the variegated gills*; gills clouded, never becoming purple or brown.

HAB. Almost all grow on dung, often near towns, in summer and autumn. (*Pl. VI., fig. 33.*)

This and the following subgenus differ from all the preceding in their black spores, and occupy an intermediate position between *Agaricus* and *Coprinus*, agreeing with the latter in the colour of the spores, but joined more properly to the genuine Agarics by the *gills not deliquescing*. Although the veil may be entirely absent in some species, yet they are so allied that they cannot be well separated.—*W. G. S.*

Sect. 1. Pileus viscid, shining when dry.

437. Agaricus (Panæolus) separatus. *L.* "Ochrey *Panæolus*."

Pileus somewhat fleshy, campanulate, obtuse, even, viscid; stem straight, shining, white, thickened downwards, ring distant; gills fixed, cinereous-black.—*Fr. Epicr. p. 234. Bolt. t. 53. Berk. Outl. t. 11, f. 7. Bull. t. 84. A. semiovatus. Sow. t. 131. Eng. Fl. v. p. 116. Price. f. 39.*

On dung. Common.

Pileus $1\frac{1}{2}$ in. broad, semiovate, very obtuse, at first ochraceous, then dirty white, shining, smooth, slightly viscid, wrinkled when old, subcarnose but watery, gills subdeliquescent, broad, ventricose, adnate by a small portion, clouded, cinereous, margin white; stem 5 in high, or more, 2 lines thick, at first fibrillose, beneath the ring squamuloso-pulverulent, above dotted, as is the ring, with the large, black, elliptic spores.—*M. J. B.* Spores $.0005 \times .0004$ in. (*Pl. VI., f. 33.*)

438. Agaricus (Panæolus) leucophanes. *B. & Br.*
"Shiny-white *Panæolus*."

Pileus campanulate, obtuse, viscid, shining when dry, innate-silky white, here and there with an ochraceous tinge; margin appendiculate; stem attenuated upwards, white, fibrillose, with scattered farinaceous particles, transversely subundulate, fistu-

lose; gills adnate, pale flesh-tinted grey, then black.—*B. & Br. Ann. N.H.* (1866) no. 1127, t. 11, f. 1.

In grass fields. Aug. King's Cliffe.

A very pretty species, allied to *A. separatus*; pileus $\frac{3}{4}$ in. across; stem 2 in. high, about 1 line thick in the centre; spores '00037 in. long, somewhat cymbiform.

439. *Agaricus (Panæolus) fimiputris.* Bull. "Dark-grey Panæolus."

Pileus submembranaceous, conical, then expanded, somewhat gibbous, even, viscid; stem slender, equal, smooth, pallid; annular zone marked; gills fixed, livid-black.—*Fr. Epicr. p.* 235. *Bull. t.* 66. *Bolt. t.* 57. *Batt. t.* 28, *P. Berk. Outl. t.* 11, f. 6. *Eng. Fl. v. p.* 116.

On dung and in pastures. Common. [Cincinnati.]

Pileus 1-2 inches broad and high, at first obtuse, conic, reticulato-rugulose, at length campanulate, dark cinereous, livid when dry; the ring broken into triangular loops or laciniae, fringing the margin, which is minutely downy and frequently split; gills adnate, ascending, mottled, cinereous-black, sub deliquescent; stem 2-6 in. high, squamuloso-tomentose, pulverulent, often beaded with little drops, striate above, nearly white, at length rufescent, zoned within.—*M. J. B.* Spores '00027 \times '00034 in.

440. *Agaricus (Panæolus) phalænarum.* Fr. "Ruddy-stemmed Panæolus."

Pileus rather fleshy, campanulato-convex, obtuse, even, smooth, viscid; veil appendiculate, fugacious; stem equal, rather firm, almost naked, pallid, rufescent; gills adnexed, broad, cinereous black.—*Fr. Epicr. p.* 235. *Bull. t.* 58. *Paul. t.* 121, f. 1. *Ann. N.H. no.* 796.

On dung. Sept. Apethorpe.

Allied closely to *A. papilionaceus*, but larger, pileus viscid, clay colour.

Sect. 2. Pileus opaque when moist. When dry subflocculose.

441. *Agaricus (Panæolus) retirugis.* Batsch. "Ribbed Panæolus."

Pileus somewhat fleshy, globose, then hemispherical, subumbonate, reticulated, with raised ribs, sprinkled with opaque atoms; veil torn, appendiculate; stem equal, pruinose, pinkish purple; gills fixed, ascending, cinereous black.—*Fr. Epicr. p.* 235. *Batsch. f.* 91.

On dung. Coed Coch.

Pileus pinkish tan-colour, distinguished from *A. corrugis* by its black pores. Spores with a distinct apiculus at both ends, $\cdot 0006 \times \cdot 0004$ in.

Sect. 3. Pileus dry, smooth, shining, without zone.

442. *Agaricus (Panæolus) campanulatus.* L. "Campanulate *Panæolus*."

Pileus somewhat fleshy, campanulate, dry, even, smooth, somewhat shining; stem equal, straight, rufous, striate above, powdered with black; gills fixed, ascending, variegated with grey and black.—*Fr. Epicr. p.* 236. *Bull. t.* 561, *f.* 2, *L. Buxb. iv. t.* 13. *Fl. Dan. t.* 1959. *Batsch, f.* 6.

On rich soil, &c. Common. [Cincinnati.]

Pileus brownish tinged with rufous, $\frac{1}{2}$ -1 in high and broad, rather shining. Stem straight, commonly 3 in. long, 1-2 lin. thick, rufescent.

443. *Agaricus (Panæolus) papilionaceus.* Bull. "Butterfly *Panæolus*."

Pileus somewhat fleshy, hemispherical, smooth, when dry rimoso-squamose; stem equal, even, whitish, powdered with white above; gills broadly adnate, very wide, at length plane, blackish.—*Fr. Epicr. p.* 236. *Bull. t.* 561, *f.* 2, *N.M. Eng. Fl. v. p.* 116. *Vent. t.* 58, *f.* 4-5.

On rich soil, dung, &c. Common. [United States.]

Pileus $\frac{1}{2}$ -1 in. broad, at length convex, when dry subrufescent, even, never viscid; gills ascending, close, quite entire; veil very fugacious; stem 3 in. high, 1-2 lines thick, rufescent.—*Fries.*

Sect. 4. Pileus dry, smooth, zoned at the margin.

444. *Agaricus (Panæolus) cinctulus.* Bolt. "Ringed *Panæolus*."

Pileus somewhat fleshy, campanulate, then expanded, even, smooth, margin with a broad, brown zone; stem rather firm, equal, brownish, gills free (?), ventricose, olivaceous black.—*Fr. Epicr. p.* 237. *Bolt. t.* 152.

On dung. Halifax.

Inserted on the authority of Bolton's figure. Distinguished by the broad brown zone at the margin of the pileus.

445. Agaricus (Panæolus) subbalteatus. Berk. & Br.
"Zoned Panæolus."

Pileus convex, fleshy, hygrophanous, fawn-coloured, pallid when dry, zoned, rugulose; stem fragile, with white fibrils; gills brownish, adnate, subventricose.—*B. & Br. Ann. N.H. no. 923.*

In a tare field. Sept. Apethorpe.

Cæspitose. Pileus $1\frac{1}{2}$ –2 in. across, at first convex, with the margin slightly incurved, then expanded, obtuse, or slightly umbonate, irregular, rather fleshy, hygrophanous, of a dull deep fawn colour, pallid when dry, slightly rugose, and marked near the margin with a dark narrow zone; veil none; stem 2–2½ in. high, 2 lines thick, fistulose, red brown, brittle, stringy, splitting longitudinally, marked with short white fibrils; gills brownish, slightly ventricose, adnate, margin white, slightly toothed. Spores black. Closely allied to *A. cinctulus*, Bolt, but differing in habit, &c.—*B. & Br.*

446. Agaricus (Panæolus) fimicola. Fr. "Dung Panæolus."

Pileus somewhat fleshy, campanulato-convex, obtuse, smooth, opaque; marked near the margin with a narrow brown zone; stem fragile, elongated, equal, pallid, pruinose above; gills adnate, broad, variegated with grey and brown.—*Fr. Epicr. p. 237. Buxb. iv. t. 28, f. 4. Bolt. t. 66, f. 1.*

On dung, rich pastures, &c.

[United States.]

Not gathered since Bolton's time. Stem 3–4 in. long, 1 line thick, dingy. Pileus obtuse, even, smooth, dingy grey when moist, clay-coloured when dry. Flesh greyish white.

Sub-Gen. 34. PSATHYRELLA. Fr. Epicr. 237.

Spores black, oval, smooth, or echinulate; veil inconspicuous, not interwoven, generally absent; pileus membranaceous, striated, margin straight, adpressed to the stem, *not exceeding the gills*; stem confluent with but heterogeneous from the hymenophore; gills adnate or free. (*Pl. VI., f. 34.*)

The species are all very slender, and the only other subgenus with black spores (*Panæolus*), is readily distinguished by the characters of the pileus; it agrees in every point with *Psathyra*, except the colour of the gills being never brown or purple, and the spores black. It also agrees, more or less, in structure with *Mycena*, *Nolanea*, and *Galera*, and also appears to be allied to *BOLBITUS*, which, however, is at once distinguished by its coloured spores.—*W. G. S.*

Sect. 1. Stem straight, smooth.

447. Agaricus (Psathyrella) gracilis. Fr. "Slender Psathyrella."

Pileus submembranaceous, conical, slightly striate when moist, hygrophanous; stem slender, straight, naked, pallid;

gills broadly adnate, subdistant, cinereous black, edge pale rose.—*Fr. Epicr. p. 238. Berk. Outl. p. 176.*

On hedge borders. Common.

Gregarious. Pileus brownish, at length often tinged with pink, $\frac{1}{2}$ -1 in. broad. Stem 3 in. and more long, naked, whitish. Spores $\cdot 00024 \times \cdot 00049$ in.

448. Agaricus (Psathyrella) hiascens. Fr. "Fissured Psathyrella."

Pileus membranaceous, campanulate, smooth, fisso-sulcate, disc even; stem straight, rigid, brittle, smooth, white; gills adnate, linear, sub-distant, acute in front, pallid, then black.—*Fr. Epicr. p. 238. Bull. t. 552, f. 2, F. G. Berk. Outl. p. 176.*

Under hedges.

Pileus 1 in. high, $1\frac{1}{2}$ in. across, sulcate up to the disc, pale dirty-ochraceous.—*M. J. B.*

449. Agaricus (Psathyrella) aratus. Berk. "Sulcate Psathyrella."

Pileus membranaceous, campanulato-conic, rather acute, deeply sulcate; stem tall, thickened at the base, white, smooth, fistulose; gills lanceolate, quite free, purplish-black.—*Berk. Outl. p. 176.*

Under hedges. Woodnewton.

Pileus 1 in. high, $\frac{4}{5}$ in. across, bright brown; flesh of the disc of the same colour. Stem 5 in. high.

Sect. 2. Stem flexuose, pruinose above.

450. Agaricus (Psathyrella) pronus. Fr. "Stooping Psathyrella."

Pileus membranaceous, hemispherical, obtuse, striate, hygrophanous, dry, opaque, slightly silky, atomate; stem very slender, equal, flexuose, sub-pellucid; gills adnate, ventricose, sub-distant, livid sooty-black.—*Fr. Epicr. p. 239. Ann. N.H. no. 924.*

Amongst grass. Sept. Apethorpe.

Stem filiform, fragile, $1\frac{1}{2}$ in. long. Pileus 4-6 lines broad, dingy.

451. Agaricus (Psathyrella) atomatus. Fr. "Sprinkled Psathyrella."

Pileus submembranaceous, campanulate, obtuse, slightly striate, hygrophanous, dry, rugulose, entire, furfuraceous with shining atoms; stem lax, fragile, white, mealy at the apex, gills adnate, broad, cinereous-black.—*Fr. Epicr. p. 239. Eng. Fl. v. p. 115.*

About hedge borders. Common.

Pileus $1\frac{1}{2}$ in. broad, at first obtusely conic, then sub-hemispherical, at length plano-expanded, with a fine evanescent arachnoid veil, ochraceous, inclining to pale rufous, at length cream-coloured, or nearly white, sometimes purplish, or rose-coloured; gills broad, ventricose, rather distant, at first pale ochraceous, then brown purple, or cinereous-black. Stem 2-3 in. high, 1-2 lines thick, somewhat rooting, fistulose, brittle, striate above, and slightly pulverulent, base thickest, and more or less cottony, never quite smooth.—*M. J. B.* Spores 0005×00035 in.

452. Agaricus (Psathyrella) disseminatus. Fr. "Clustered Psathyrella."

Pileus membranaceous, ovato-campanulate, furfuraceous, then naked, sulcato-plicate, entire, discoloured; stem lax, subflexuose, fragile, at first mealy, then smooth; gills adnate, broadly linear, whitish, cinereous, then black.—*Fr. Epicr. p.* 240. *Sow. t.* 166. *Paul. t.* 123. *f.* 6. *Fl. Dan. t.* 1848. *Schæff. t.* 308. *Batsch. f.* 3. *Buxb. ii., t.* 50, *f.* 5. *Eng. Fl. v. p.* 118. *Batt. t.* 27, *C. Vent. t.* 35, *f.* 3-4.

About trunks of trees, and on the ground. Common.

[United States.]

Gregarious, cæspitose. Pileus 3 lines broad, campanulato-conic, minutely pubescent, strongly striate, submembranaceous, tender, fragile, ochraceous, at length white, with a pearly tint towards the margin; gills broadly adnate, pink, inclining to cinereous. Stem 1 in. high, $\frac{1}{2}$ line thick, fistulose, curved, white, pubescent, attenuated upwards, downy at the base.—*M. J. B.* Spores 0003×0002 in. (*Pl. VI. fig.* 34.)

Genus 2.

COPRINUS, Fr. Epicr. p. 241.



Fig. 38.

Spores black; pileus: margin of pileus straight, at first adpressed to the stem; stem confluent with or distinct from the hymenophore; gills free, at first coherent, and sprinkled with a micaceous scurf, soon deliquescing into a black fluid, trama none.

HAB. Fat and rank places, often on dung, but sometimes on decaying wood. (*Figs.* 38, 39.)

Readily distinguished by its deliquescent habit.

Sect. 1. Pelliculosi.—pileus rather fleshy.

* *Comati.*

453. *Coprinus comatus.* Fr. "Shaggy Coprinus."

Pileus rather fleshy, cylindrical, then expanded, even, soon torn into broad, adpressed, scattered scales; stem hollow, fibrillose, bulb solid, rooting; ring moveable; gills free, linear, white, then purplish.—*Fr. Epicr. p.* 242. *Batt.* 26, B. *Fl. Dan. t.* 831. *Schæff. t.* 46, 47. *Sow. t.* 189. *Grev. t.* 119. *Paul. t.* 127. *Krombh. t.* 3, *f.* 35, *t.* 30, *f.* 15-21. *Cooke, B. F. t.* 11. *Smith, E. M. f.* 13. *Badh. i. t.* 10, *f.* 2, *ii. t.* 7, *f.* 1-3. *Price, f.* 49. *Gard. Chron.* (1860), *p.* 73, *fig.* *Trans. Woolh. Cl.* 1868, *t.* 13. *Curt. Fl. L. t.* 93. (*Bolt. t.* 142, *var.?*) *Eng. Fl. v. p.* 118. *Fl. Boruss. t.* 389. *Hogg. & Johnst. t.* 3.

Sides of roads, pastures, &c. Common. Esculent.
[S. Carolina.]

Pileus 3-4 in. high, 2 in. broad, campanulato-cylindrical, cuticle white, breaking up into broad fibrillose, sub-fuscos scales; beneath this coating the pileus is finely plicate, often split, and of a pinky-brown, flesh scarcely any on the margin, rather thick in the centre; gills very numerous and close, beautifully varied with pink and brown-black, margin white, or pinkish, minutely downy, slightly undulated, quite free, so as to leave a sort of collar round the stem. Stem 5 in. or more high, $\frac{3}{4}$ in. thick at the base, hollow, filled with arachnoid fibres, bulbous, fibrillose, and sub-adpresso-squamose, sometimes tinged with pink, brittle, but tolerably firm; ring thick and moveable.—*M. J. B.* Spores with an apiculus at one end, or on one side, $\cdot 00058 \times \cdot 00032$ in.—*W. G. S.*

454. *Coprinus ovatus.* Fr. "Ovate Coprinus."

Pileus submembranaceous, ovate, then expanded, striate; at first woven into densely imbricated, thick, concentric scales; stem bulbous, rooting, flocculose, hollow above, ring deciduous; gills remote, lanceolate, white, then brownish-black.—*Fr. Epicr. p.* 242. *Schæff. t.* 7. *Ray. Syn. no.* 22, *p.* 5. *Ann. N. H. no.* 925.

In pastures. Woodnewton.

Similar to *C. comatus*, but smaller, and more delicate; pileus whitish; the gills are less deliquescent. Stem 3-4 in. long.

455. *Coprinus sterquilinus.* Fr. "Sulcate-dung Coprinus."

Pileus membranaceous, conical, then expanded, sulcate, at first villous or silky, disc rather fleshy, squarroso-squamose; stem attenuated; fibrillose, base solid, not rooting, annulate; gills

free, ventricose, purplish.—*Fr. Epicr. p. 242. Mich. t. 83. f. 3. Eng. Fl. v. p. 119. Ann. N. H. no. 150.*

On dung. Rare. King's Cliffe.

Pileus $1\frac{1}{2}$ in. broad, dingy; stem 5 in. long, hollow, solid at the base.

**** *Atramentarii.***

456. *Coprinus atramentarius.* Fr. "Inky Coprinus."

Pileus slightly fleshy, ovate, then expanded, repand, spotted at the top with innate squamules; stem hollow, firm, zoned within; ring abrupt, fugacious; gills free, ventricose, white, then purplish-black.—*Fr. Epicr. p. 243. Fl. Dan. t. 1370. Fl. Boruss. t. 390. Price. f. 40. Sow. t. 188. Vaill. t. 12, f. 10-11. Bull. t. 164. Berk. Outl. t. 12, f. 1. Cooke. B. F. t. 12. Eng. Fl. v. p. 119. Badh. i. t. 10, f. 1. ii. t. 9, f. 1-2.*

About old stumps and on naked soil. Common. Esculent.
[United States.]

Gregarious, cæspitose; pileus $3\frac{1}{2}$ in. or more high, subcarnose, campanulate, obtuse, edge uneven, dirty-grey, at length brownish, innato-fibrillose, more or less furfuraceous and corrugated, apex often scaly; gills very broad and close, ventricose, umber, margin white, rounded behind, quite free; stem $3\frac{1}{2}$ in. high, $\frac{1}{2}$ in. thick, fistulose, juicy, fibrillose, attenuated upwards, brittle, the substance banded concentrically.—*M. J. B.* Spores 00035×00021 in.

[*COPRINUS LURIDUS.* Fr. (Bolton. t. 25.) has only been found by Bolton, at Halifax, and is probably a variety of the above.]

457. *Coprinus fuscescens.* Fr. "Brownish Coprinus."

Pileus submembranaceous, ovate, then expanded, unpolished; disc rather fleshy, even or cracked, scaly; stem hollow, fragile, incurved, subfibrillose, scarcely annulate; gills fixed, umber-black.—*Fr. Epicr. p. 244. Schæff. t. 17. Paul. t. 125, f. 1.*

On dead stumps. Rare. Kilmory. [Cincinnati.]

More delicate than *C. atramentarius*, smaller and more fragile; pileus brownish-grey, 2, rarely 3 in. broad; the disc becoming brown, not sprinkled with micaceous particles, but at first covered with an opaque mealiness; stem 3 in. long, 2-3 lin. thick; spores with an oblique apiculus, 0004×00023 in. (Fig. 38, reduced.)

**** * *Picacei.***

458. *Coprinus picaceus.* Fr. "Magpie Coprinus."

Pileus membranaceous, ovato-campanulate, striate, variegated with broad, white, superficial scales; stem hollow, bul-

bous, not rooting, fragile, smooth; gills free, ventricose, cinereous-black.—*Fr. Epicr. p.* 244. *Bull. t.* 206. *Sow. t.* 170. *Fl. Dan. t.* 144. *Smith. P.M.f.* 9. *Eng. Fl. v. p.* 119.

On roadsides. Rare.

Pileus 2 in. broad and high, campanulate, glutinous, closely grooved, brown with a tinge of red above; margin cinereous, dimpled at the apex; cuticle cracking into large pale fawn-coloured subconic scales, flesh very thin; gills broad, ventricose, narrow in front, black, the extreme margin, except when deliquescent, white, quite free; stem 6 in. high, $\frac{1}{2}$ in. thick at the base, beautifully satiny with adpressed fibrillæ, attenuated above, where it is submentose and stained with the spores, sub-bulbous below, hollow.—*M. J. B.* Spores $\cdot 00055 \times \cdot 00036$ in.

459. Coprinus apthosus. *Fr.* "Scaly Coprinus."

Pileus membranaceous, ovato-campanulate, without striæ, sprinkled with superficial floccose scales, then naked; stem hollow, equal, twisted, fibrillose; gills adnate, linear, white, then black.—*Fr. Epicr. p.* 245. *Bolt. t.* 26.

In hollow trees, cellars, etc.

Pileus about an inch high, livid, not striate; stem 2 in. long, 2 lines thick, soft, white.

460. Coprinus similis. *B. & Br.* "Striate Coprinus."

Pileus ovato-campanulate, lineato-striate, pallid, centre obscurely hygrophanous, clothed with acute brown warts; stem hollow, white, largest at the base; gills adnate, attenuated behind, sublinear, brownish near the margin.—*B. & Br. Ann. N. H.* 1865, no. 1011.

On trunks of dead trees. Sept. Bodelwyddan.

Resembling *C. apthosus*, but differing in the striate pileus, &c.

461. Coprinus flocculosus. *D. C.* "Flocculose Coprinus."

Pileus membranaceous, globose, then expanded, striate, discoid; clothed with evanescent floccose scales, at length smooth; stem hollow, equal, smooth, naked; gills remote, ventricose, violaceous, then brownish-black.—*Fr. Epicr. p.* 245. *Batt. t.* 25, *f. A. Ann. N. H.* no. 926.

In pastures. Aug. King's Cliffe.

Pileus $2\frac{1}{2}$ in. across, ovate, at length expanded, dirty-white, striate, splitting in the direction of the gills, covered with innate scales, thus resembling *C. picaceus*; stem 3 in. high, attenuated upwards, white, slightly swollen at the base, smooth, or rather finely silky under a lens; gills free, generally solitary.—*B. & Br.*

** *Tomentosi.*
**

462. *Coprinus extinctorius.* Fr. "Extinguisher Coprinus."

Pileus submembranaceous, clavate, then campanulate, straight, margin striate, at first clothed with evanescent floccose scales; stem hollow, attenuated from the rooting base, smooth; gills reaching the stem, lanceolate, white, then brown-black.—*Fr. Epicr. p.* 245. *Paul. t.* 124, *f.* 7. *Bull. t.* 437, *f.* 1. *Bolt. t.* 24.

On the ground.

Stem hollow, attenuated from the rooting base, 4-5 in. long, 3 lin. thick; pileus about 3 in. broad, becoming pale; disc darker, somewhat livid.

463. *Coprinus fimetarius.* Fr. "Shaggy dung Coprinus."

Pileus submembranaceous, clavate, then conical, at length torn and revolute, at first rough with white floccose scales, then naked, longitudinally rimoso-sulcate, even at the apex; stem squamulose, thickened at the base, solid; gills free, lanceolate, then linear and flexuose, black.—*Fr. Epicr. p.* 245. *Bull. t.* 88.

On dung heaps. Mar. Apr. Common.

Variable; sometimes there is a root as long as the stem; subcæspitose; stem about 2-3 in. long, 2-3 lin. thick; spores $\cdot 00056 \times \cdot 00035$ in.

464. *Coprinus tomentosus.* Fr. "Downy Coprinus."

Pileus submembranaceous, cylindrical, then conical, striate, floccoso-tomentose, then longitudinally cracked; stem hollow, rather short, equal, velvety; gills free, linear, brownish-black.—*Fr. Epicr. p.* 246. *Bull. t.* 138. *Bolt. t.* 136. *Mich. t.* 75, *f.* 3.

On dung and in rich pastures.

The coating sometimes peels off in broad patches. Pileus narrowly pyramidal, tomentum subpersistent, whitish grey, sometimes furfuraceous; $1\frac{1}{2}$ in. high. Stem 2-3 in. long, 2-3 lines thick.

465. *Coprinus niveus.* Fr. "Snowy Coprinus."

Pileus submembranaceous, oval, then campanulate, and expanded, floccoso-squamulose, with dense white down, and nearly persistently furfuraceous; stem fistulose, equal, villous, white; gills subadnate, narrow, blackish.—*Fr. Epicr. p.* 246. *Eng. Fl. v.* p. 121. *Fl. Dan. t.* 1671. *Paul. t.* 125, *f.* 2. *Sow. t.* 262?

On horse dung. Common.

[United States.]

Pileus $\frac{1}{2}$ -1 in. broad, campanulate, at length expanded and depressed, margin rolled back, clothed with dense scaly meal, margin striate, very thin and delicate; gills narrow, free, subventricose, black, stem 2 in. or more high, 1 line thick, thickest at the base, senceo-squamulose, hollow, fragile, splitting longitudinally.—*M. J. B.* Spores $\cdot 0004 \times \cdot 00047$ in.

*** *Micacei.*
**

466. *Coprinus micaceus.* Fr. "Glistening Coprinus."



Fig. 39.

Pileus submembranaceous, oval, then campanulate, subrepand, striate, discoid, sprinkled with fugacious micaceous granules, at length naked, rimosulcate; stem hollow, silky, or even, whitish; gills adnexed, lanceolate, whitish, brown to the middle, then blackish.—*Fr. Epicr. p. 247. Fl. Dan. t. 1193. Bolt. t. 54. Bull. 246, 565. Schæff. t. 66, f. 4-6. Sow. t. 261. Grev. t. 76. Paul. t. 126. Eng. Fl. v. p. 120. Fl. Boruss. t. 376. Corda. Sturm. t. 2.*

About old stumps. Common.
[S. Carolina.]

Cæspitose. Pileus $\frac{3}{4}$ -1 in. broad, or more, half ovate, often more or less irregular from the dense mode of growth, sprinkled with glittering meal, strongly striate, almost plicate, rufous, the umbo darkest, margin cinereous, very thin, veil very fugacious; gills attenuated in front, broad behind, ascending, attached above, umber, mottled with the spores, which appear black when viewed in a mass, but are really brown purple. Stem 2-3 in. high, 2 lines thick, hollow, brittle, squamulose, pulverulent, cuticle often cracked into little scales, very faintly tinged with red, attenuated upwards, base downy.—*M. J. B.* Spores with an oblique apiculus, $\cdot 0003 \times \cdot 00026$ in.
(Fig. 39, reduced.)

467. *Coprinus aratus.* Berk. & Br. "Umber Coprinus."

Solitary. Tall. Pileus campanulate, umber, deeply sulcate, micaceous; disc rugose; stem attenuated upwards, sub-bulbous at the base, minutely silky, snow white; gills narrow, bright brown, free.—*Ann. N.H. no. 927.*

In a hollow tree. May. King's Cliffe.

Pileus campanulate, 3 in. across, umber, deeply sulcate up to the darker wrinkled disc, sprinkled with large micaceous particles, revolute in decay; stem 5 in. high, $2\frac{1}{2}$ lines thick, attenuated upwards, slightly bulbous at the base, straight, smooth, or rather minutely silky, snow-white, fistulose, umber within; gills narrow, attenuated at either end, free, deep rich brown, then black.—*B. & Br.*

468. *Coprinus radians.* Fr. "Radiating Coprinus."

Pileus membranaceous, ovato-campanulate, micaceous, disc granuloso-squamose, margin striate; stem equal, naked, short, fibrilloso-radiating at the base; gills reaching the stem, sub-linear, white, then violaceous-black.—*Fr. Epicr. p. 248. Ann. Sc. Nat. xiii. t. 10, f. 1. Sow. t. 145. Eng. Fl. v. p. 121.*

On plaster walls.

Pileus 2 in. broad, gills free, numerous, at first white. Stem $1\frac{1}{2}$ in. high, 2 lines thick, cylindric, fistulose, almost equal, curved in consequence of its vertical place of growth, naked, smooth, furnished with a radiating base 2 in. broad.—*Desm.* Spores $\cdot 00033 \times \cdot 00027$ in.—*W. G. S.*

*** *Glabrati.*

469. *Coprinus deliquescens.* Fr. "Deliquescent Coprinus."

Pileus submembranaceous, ovato-campanulate, then expanded, subrepand, broadly striate, smooth, top studded with innate papillæ; stem hollow, smooth; gills at length remote, linear, lurid black.—*Fr. Epicr. p. 249. Fl. Dan. t. 1070. Bull. t. 558, f. 1. Fl. Boruss. t. 375.*

On old stumps.

Sometimes confounded with *C. atramentarius*. Pileus 3-4 in. broad, livid, never floccose. Gills at length very narrow.

Sect. 2. Veliformes. Pileus plicato-sulcate.

* *Cyclodei*—stem annulate or volvate.

470. *Coprinus Hendersonii.* Fr. "Henderson's Coprinus."

Pileus very delicate, oval, campanulate, smooth, striate to the middle; stem filiform, becoming smooth, with a small erect entire ring (at length evanescent); gills black.—*Fr. Epicr. p. 250. Berk. Hook. Journ. t. 26, f. 1. Berk. Outl. t. 24, f. 8. Price, f. 114.*

On hot beds and on dung in fields. Rare. Milton, &c., Norths.

Looks like a small annulate *A. disseminatus*. Pileus finely granulated under a lens.

** *Lanatuli*—pileus superficially floccose, veil evanescent.

471. *Coprinus macrocephalus*. Berk. "Stunted Coprinus."

Pileus at first cylindrical, then cylindrico-campanulate, sprinkled with pointed scales; stem dirty white, fistulose, clothed with short cottony down and loose fibres, strigose at the base; gills linear, perfectly free.—*Berk. Outl. p. 180. Eng. Fl. v. p. 122.*

On putrid dung. Cotterstock, Norths.

Pileus $\frac{3}{8}$ in. broad, $\frac{3}{4}$ in. high, linear when young, then cylindrico-campanulate, margin slightly spread out, adorned with elegant, adpressed, or patent scales, the remains of the veil; apex brown, shaded off into slate-colour on the margin, scarcely at all pubescent; gills linear, perfectly free, at length black. Stem 1-2 in. high, 2 lines thick, ascending, dirty white, fistulose, clothed with short cottony down, and with longer, sometimes deflexed loose fibres, strigose at the base, somewhat attenuated upwards, and stained with the black elliptic spores.—*M. J. B.*

472. *Coprinus lagopus*. Fr. "Hare's-foot Coprinus."

Pileus very thin, cylindrical, then campanulate, clothed with white flocci, at length split, radiato-sulcate, somewhat revolute; stem very fragile, on all parts woolly, white; gills free, linear, black.—*Fr. Epicr. p. 250. Saund. & Sm. t. 19.*

On dung.

Remarkable for the dense cottony coat of the stem, which is 5 in. long or more. Pileus about 1 in. broad, whitish; disc livid.

473. *Coprinus nycthemerus*. Fr. "Thin-capped Coprinus."

Pileus very thin, soon rimose, expanded, flocculoso-furfuraeous, discoid, then naked, furcato-striate; stem equal, flaccid, smooth, whitish; gills free, narrow, blackish, at first crowded, then distant, remote.—*Fr. Epicr. p. 251. Bull. t. 542, f. D.I.*

On dung. King's Cliffe. Norths. [Cincinnati.]

Pileus grey, a few lines across, from 4 lines to $\frac{1}{2}$ in. or more high; disc brown; stem whitish.

474. Coprinus radiatus. *Fr.* "Delicate Coprinus."

Very delicate; pileus clavate, then campanulate, tomentose, soon splitting, expanded, naked, discoid, plicato-radiate; stem filiform, unpolished; gills free, distant, few.—*Fr. Epicr. p.* 251. *Bull. t.* 542, *f. L. & E.H. Eng. Fl. v. p.* 123.

On dung. Common.

[United States.]

Very tender, so that a breath destroys it. Pileus 1-2 lines broad, at first digitaliform, yellowish, apex obtuse, darker, striate and downy, when full grown pale brown, or nearly colourless, centre sometimes dimpled, strongly furrowed, edge notched, and often split in a radiated manner, so as to appear like the spokes of a wheel. Gills about ten, with minute smaller ones in the interstices. Stem 1-3 in. high, very slender, quite filiform, smooth, but sometimes fibrillose and tomentose, dusky or colourless, a little thickened at the base, which is slightly downy.—*M. J. B.* Spores $\cdot 0003 \times \cdot 0002$ in.

* * *Furfurelli*—pileus mealy or micaceous.

475. Coprinus domesticus. *Fr.* "Domestic Coprinus."

Pileus thin, ovate, campanulate, obtuse, splitting, undulato-sulcate, furfuraceo-squamulose; stem attenuated, silky, white; gills fixed, crowded, linear, white with reddish, then brown-black.—*Fr. Epicr. p.* 251. *Huss. t. Eng. Fl. v. p.* 121.

On damp carpets, &c.

[United States.]

Very brittle, often caespitose. Pileus 2 in. broad, membranaceous, campanulate, apex nearly smooth, reddish brown; gills white when young, then ruddy, at length brown-black; stem 2-3 in. high, 3 lines thick, even, attenuated upwards.—*Fries.*

476. Coprinus ephemerus. *Fr.* "Ephemeral Coprinus."

Pileus very thin, ovali-clavate, then campanulate, splitting, radiato-sulcate, sub-furfuraceous; disc elevated, even; stem slender, equal, pellucid, smooth; gills reaching the stem, distant, whitish, then brown and black.—*Fr. Epicr. p.* 252. *Fl. Dan. t.* 832, *f. 2. Bull. t.* 128. *Batt. t.* 27, *B. Eng. Fl. v. p.* 123.

On dung hills. Common.

[United States.]

Extremely fugacious. Pileus $\frac{1}{4}$ – $\frac{3}{4}$ in. broad, ovate or campanulate, at length deflexed, margin finally splitting and curling back; apex umber, shaded gradually into a delicate bluish-grey, striate, scaly when young; gills at length black, linear, edge downy, white; stem 1-2 in. high, 1 line thick, dirty white, with a few fibrillæ, at length naked.—*M. J. B.*

477. *Coprinus plicatilis*. Fr. "Plaited Coprinus."

Pileus very thin, ovali-cylindrical, then expanded, splitting, sulcato-plicate, somewhat smooth; disc broad, at length depressed, even; stem equal, smooth, white; gills adnate to a distinct collar, distant, greyish black.—*Fr. Epicr. p.* 252. *Curt. Fl. Lond. t.* 200. *Sow. t.* 364. *Fl. Dan. t.* 1134. *Batt. t.* 28, *A. B. Bull. t.* 552, *f.* 2 (*partly*). *Eng. Fl. v. p.* 122. *Price, f.* 33.

In pastures. Common.

[United States.]

Extremely fugacious; pileus $\frac{1}{2}$ -1 in. broad, cylindrical, furfuraceous, at length plane, nearly naked, umbilicate, grey, yellowish-brown in the centre, beautifully plicate, membranaceous, pellucid; gills free, dark-grey, subdistant, very narrow, tender; stem 1-3 in. high, very slender, fragile, smooth, grey, tinged with brown, sometimes white, hollow.—*Grev.*

478. *Coprinus Spraguei*. B. & C. "Garden Coprinus."

Very delicate; pileus campanulate, then conical, tomentose, plicate; stem fistulose, pale cinnamon, gills few, narrow.—*Ann. Nat. Hist. Oct.* 1859. *Berk. Outl. p.* 182.

In gardens. July. King's Cliffe. [New England.]

Spores narrow, subcymbiform, .0004 in. long. The difference between it and *C. plicatilis*, as regards the spores, is very striking.—*M. J. B.*

** *Hemerobii*—pileus always smooth.
**

479. *Coprinus hemerobius*. Fr. "Collared Coprinus."

Pileus very thin, ovate, nearly even, then expanded, campanulate, splitting, sulcate, smooth, apex subpruinose; stem elongated, attenuated, smooth, pallid; gills linear, pallid, then black, adnexed to an obscure collar.—*Fr. Epicr. p.* 253. *Bolt. t.* 31. *Fl. Dan. t.* 1960, *f.* 2.

On roadsides. Rare.

With the habit of *C. plicatilis*, but the stem longer, 4-5 in., and very fragile, pileus persistently campanulate, disc bright brown, never the least depressed; gills 1-1 $\frac{1}{2}$ lines broad.

480. *Coprinus filiformis*. Berk. & Br. "Filiform Coprinus."

Very minute; pileus cylindrical, striate, grey, with white micaceous particles; stem capillary, white, very minutely pilose.—*Ann. N.H. no.* 928, *t.* 15, *f.* 8.

On the ground, in woods. Sept. Colleyweston.

Pileus not a line high, cylindrical, striate, grey, shining with white mealy particles; stem half-an-inch high, extremely fine, white, sprinkled with a few short delicate hairs; not larger than *Mucor caninus*.—*B. & Br.*

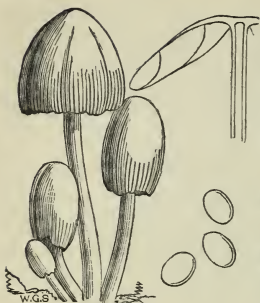
Gen. 3. BOLBITIUS, Fr. Epicr. p. 253.

Fig. 40.

Spores coloured; pileus yellow, becoming moist; stem hollow, confluent with the hymenophore; gills becoming moist, but not deliquescent, at length losing their colour and becoming powdery.

HAB. Dung or rank earth near to towns. (Fig 40.)

A very natural but small genus, intermediate between *Agaricus* and *Coprinus* on one side, and *Coprinus* and *Cortinarius* on the other; it resembles *Coprinus* in its mode of growth, and ephemeral existence. The species have no known use.—W. G. S.

481. Bolbitius Boltoni. Fr. "Bolton's Bolbitius."

Pileus somewhat fleshy, viscid, at first smooth, then the membranaceous margin is sulcate; disc darker, subdepressed; stem attenuated, yellowish, ring fugacious, at first flocculose; gills sub-adnate, livid yellow, then brown.—*Fr. Epicr. p. 254. Bolt. t. 149. Ag. Boltonii. Eng. Fl. v. p. 117.*

On dung. June—Sept.

Pileus at first conical, 2 in. broad, yellow, turning pale; stem 3 in. high. Spores brownish.

482. Bolbitius fragilis. Fr. "Fragile Bolbitius."

Pileus sub-membranaceous, viscid, pellucid, margin striate, disc sub-umbonate; stem attenuated, naked, smooth, yellow; gills attenuated, adnexed, yellowish, then pale cinnamon.—*Fr. Epicr. p. 254. Bolt. t. 65. Sow. t. 96.*

On dung. Common.

Pileus yellow, then whitish, more delicate and fragile than *B. Boltoni*. Spores rusty brown. Stem 3 in. long.

Ag. vitellinus, Eng. Fl. v. p. 311, is probably this species.

(fig. 40.)

483. Bolbitius titubans. Fr. "Wavering Bolbitius."

Pileus membranaceous, expanded, pellucid, discoid, striate to the middle; stem slender, straight, shining, yellowish; gills slightly adnexed, pallid, then fleshy-brown (salmon coloured. B.)—*Fr. Epicr. p. 254. Bull. t. 425, f. 1. Sow. t. 128. Eng. Fl. v. p. 117.*

Amongst grass. May—Oct. Common.

Pileus 1 in. broad, campanulato-convex, yellow, viscid, shining, margin notched, plicate and striate, pale cinnamon, submembranaceous, very delicate and tender, smooth, at length almost deliquescent, shining, and subochraceous; gills narrow, slightly ventricose, very minutely adnexed, cinnamon. Stem 4-5 in. high, 1-1½ line thick, striate above, pulverulento-squamulose, pale yellow, fistulose, very tender and delicate.—*M. J. B.* Spores salmon colour, $\cdot 00032 \times \cdot 00017$ in.

484. *Bolbitius apicalis.* Smith. “Two-coloured Bolbitius.”

Pileus membranaceous, brown, striate from the first, then plicate, liable to split; disc ochraceous, somewhat fleshy, obscurely umbonate, the difference in colour between the two parts defined by a distinct line; stem hollow, striate, white, minutely pruinose under a lens; gills somewhat broad, ventricose, free, at first pressed to the stem, brown.—*W. G. Smith, in litt.*

In pastures. Early summer. Staplehurst.

Spores brown, $\cdot 00035 \times \cdot 00025$ in. Stem about 2 in. long. Pileus $\frac{3}{4}$ in. high.—*W. G. S.*

485. *Bolbitius tener.* B. “Delicate Bolbitius.”

Very delicate; pileus white, moist, conical, elongated; stem white, bulbous at the base; gills attenuated behind, nearly free, salmon coloured.—*Berk. Outl. p. 183, t. 12, f. 2. B. albipes, Fr. Mon. Hym.*

Amongst short grass. Apethorpe.

At first looking like a dry specimen of *Ag. tener*.

Gen. 4. CORTINARIUS, Fr. Epicr. p. 255.

Spores rusty-ochre, resembling in colour peroxide of iron; veil universal, of a different texture to the pileus, and consisting of arachnoid threads; a similar veil is found in *Agaricus*, but it is there either partial, or continuous with the cuticle of pileus; stem confluent with the hymenophore; gills adnate, membranaceous, persistent, cinnamon-coloured and powdery; trama floccose.

HAB. Woods and fields.

This genus, the most natural amongst the *Agaricini*, is readily distinguished by its peculiar habit, but is badly defined by artificial characters; the species are variable in size and changeable in colour; when old they present a different appearance to their young state, and are very different when dry to when fresh.—*W. G. S.*

Sub-Gen. 1. PHLEGMACIUM, Fr. Epicr. p. 256.



Fig. 41.

Pileus with a continuous pellicle, viscid when moist; veil (and consequently the stem) dry, not glutinous.

(Fig. 41, reduced.)

486. Cortinarius (Phlegmacium) caperatus. Fr. "Wrinkled Cortinarius."

Pileus fleshy, ovate, then expanded, obtuse, moist, incrustated with superficial white flocci; stem stout, smooth, white, squamulose at the apex, from the broken, reflexed, membranaceous ring; gills fixed, seceding, serrate, crowded, clay-coloured.—*Fr. Epicr. p. 256. Fl. Dan. t. 1675. Krombh. t. 73, f. 10-12. Bot. E. Bord. t. 9. Ann. N.H. no. 691.*

In woods. Sept. Berwickshire. Lancashire.

Pileus, ring, and stem presenting deeper or lighter shades of ferruginous orange, dusted with pulverulent particles, which consist of obovate pedicellate cells, the sides of which are sometimes proliferous. Spores bright ferruginous, .0004 in. long.—*M. J. B.*

487. Cortinarius (Phlegmacium) varius. Fr. "Variable Cortinarius."

Pileus compact, hemispherical, then expanded, even, viscid, discoid; margin smooth; flesh white; stem solid, short, with conical adpressed flocci, whitish; gills emarginate, crowded, quite entire, purplish, at length clay-coloured or cinnamon.—*Fr. Epicr. p. 258. Schæff. t. 42. Eng. Fl. v. p. 87.*

In woods. Sept.—Nov.

[Cincinnati.]

Very variable in size, but nearly constant in colour, never having a blue tint on the stem; gills when young pale (purplish, margin yellow), at length dilute, of a clay colour, inclining to cinnamon. Stem short or elongated, marginato-bulbous, or nearly equal, even or scaly.—*Fries.*

488. Cortinarius (Phlegmacium) cyanipes. *Fr.* "Blue-stemmed Cortinarius."

Pileus fleshy, hemispherical, then expanded, even, viscid; margin thin, smooth, of the same colour; flesh whitish; stem solid, violaceous then whitish, naked above the thin veil; bulb depressed, oblique; gills adnate, then emarginate, broad, rather crowded, violaceous, then pallid.—*Mon. Hym.* ii. p. 8. *Fr. Epicr.* p. 258. *Sow. t.* 223. *C. cyanopus*, *Berk. Outl.* p. 184.

In woods.

Pileus $2\frac{1}{2}$ in. broad, at first livid brown, then opaque tan-colour; stem 2-3 in. long, $\frac{1}{2}$ in. thick, naked, white, violet upwards; gills 3-4 lines broad, at first adnate, at length emarginate.

489. Cortinarius (Phlegmacium) russus. *Fr.* "Ruddy Cortinarius."

Pileus fleshy, convexo-plane, viscid, margin innately silky-fibrillose; stem somewhat hollow, soft, attenuated, closely fibrillose, pallid, nearly white, veil fugacious; gills adnate, broad, crowded, connected by veins, reddish-ferruginous.—*Fr. Epicr.* p. 261. *Trans. Woolh. Cl.* 1870, t. 1.

In moist woods. Autumn.

Pileus 4 in. broad, fleshy, convex, then flattened, obtuse, viscid, glabrous at the disc, fibrous at the margin, brittle, uniformly red. Veil tender, fugacious. Gills obtusely adnate, scarcely perceptibly rounded, or with a slight decurrent tooth, crowded, veined, of a red peroxide of iron colour, similar to the pileus. Stem stuffed, then hollow, not bulbous, often curvato-ascending, soft, streaked with fine silky fibres, somewhat pruinose at the apex. Flavour not bitter but nauseous. Spores brown, $\cdot 00032 \times \cdot 0002$ in.—*W. G. S.*

490. Cortinarius (Phlegmacium) anfractus. *Fr.* "Bent Cortinarius."

Pileus fleshy, unequal, plicate, at length undulato-repand, rather viscid, shining when dry; stem stuffed, unequal, closely fibrillose; apex violaceous and veiled; gills arcuato-adfixed, crisped, somewhat distant, dingy olive, then cinnamon.—*Fr. Epicr.* p. 262. *Ann. N.H.* no. 692.

In woods. Rare. King's Cliffe.

Pileus covered completely by a close white volva when young.—*M. J. B.* Stem clavate, immarginate, 2 in. long, $\frac{1}{2}$ in. or more thick; pileus 2-3 in. broad, even, dark olive, then dingy tawny. Gills emarginate, distant, 3-4 lines broad.

491. Cortinarius (Phlegmacium) multiformis. Fr.
Multiform Cortinarius."

Pileus fleshy, convex, then expanded, equal, smooth, viscid; flesh and fugacious veil white; stem solid, attenuated, closely fibrillose, naked, white, then yellowish; bulb submarginate; gills emarginate, crowded, serrated, white, then clay-coloured cinnamon.—*Fr. Epicr. p. 263. Sow. t. 102.*

In woods. Rare.

Stem solid, 2-4 in. long, about $\frac{1}{2}$ in. thick, equal or attenuated, naked, white, then yellowish. Pileus yellow, clayey yellow, tawny, &c. Flesh white, at first compact, then soft. Spores ochraceous.

492. Cortinarius (Phlegmacium) glaucopus. Fr. "Brown-zoned Cortinarius."

Pileus compact, torn, expanded, subrepand, viscid, then floccoso-squamose or fibrillose, flesh at length yellowish; stem solid, stout, striate, bluish, then pale yellowish, margined at the base; gills emarginate, broad, bluish, then clay-coloured cinnamon.—*Fr. Epicr. p. 264. Schæff. t. 53. Batsch. f. 73. Huss. t. Mag. Zool. & Bot. no. 4.*

In pine woods.

[S. Carolina.]

Stem solid, very thick, at first bulbous, 3 in. long, bulb evanescent, but the base marginate, pale blue, without and within base yellowish. Pileus rather viscid, rarely even, commonly floccoso-squamose, dingy yellow, tan-coloured, tawny, or clay colour.

493. Cortinarius (Phlegmacium) callochrous. Fr.
"Tawny-viscid Cortinarius."

Pileus fleshy, convex, then expanded, smooth, viscid, unchangeable; flesh compact, white; stem solid, equal, fibrillose, white, then yellowish; bulb distinct, margined; gills emarginate, crowded, serrated, bright blue, then purplish.—*Fr. Epicr. p. 265. Berk. Outl. t. 12, f. 3. Eng. Fl. v. p. 86.*

In woods.

[S. Carolina.]

Pileus 3-4 in. broad, truly carnose, viscid when moist, nearly smooth, with a satiny lustre, olivaceous tawny when young, tawny when full grown; flesh tinged with yellow, and when young very dilute violet. Veil arachnoid. Gills close, thin, emarginate, serrulate, at first bright violet, then ferruginous, with a dilute violet tinge, not at all olivaceous. Stem 1-3 in. high, 1 in. thick, fibrillose, the fibrillæ above copiously dusted with the spores, bulbous, violet towards the gills, the rest whitish, when young very shaggy at the base.—*M. J. B.*

494. Cortinarius (Phlegmacium) cœrulescens. Fr.
 "Azure-blue Cortinarius."

Pileus fleshy, convex, then expanded, even, viscid; flesh soft; stem solid, attenuated, naked, bluish, then whitish; bulb marginate; gills adnexed, crowded, quite entire, at first of a pure dark blue.—*Fr. Epicr. p. 265. Schæff. t. 34, f. 5. Letell. t. 651. Ann. N.H., no. 68. Vent. t. 32, f. 1-3.*

In woods. Sept. Oct.

[Cinnati.]

Pileus $2\frac{1}{2}$ -3 in. broad, at length nearly plane, with the margin repand, of a beautiful azure blue; at first viscid, when dry marked with a few innate indistinct squamiform patches, fleshy, flesh rather firm, not changing to violet when bruised. Gills rather distant, adnate, subdecurrent, obscurely emarginate, violet, at length stained with the spores. Stem 3 in. high, $\frac{1}{2}$ - $\frac{3}{4}$ in. thick, solid, bulbous, of the same colour as the pileus, fibrillose. Smell like that of radishes.—*M. J. B.*

495. Cortinarius (Phlegmacium) purpurascens. Fr.
 "Purplish Cortinarius."

Pileus compact, dilated, subrepand, grained, viscid; flesh blue; stem solid, blunt, fibrillose; bulb marginate, vanishing; gills broadly emarginate, crowded, bluish, then clay-coloured cinnamon, purplish when rubbed.—*Fr. Epicr. p. 265.*

In woods. Common.

Pileus obtuse, disc compact, 4-5 in. broad, bay or bright brown, then tawny olive, with an elevated brown zone. Stem solid, thick, bulbous, pale blue. Gills 3 lines and more broad.

496. Cortinarius (Phlegmacium) dibaphus. Fr. "Spotted Cortinarius."

Pileus fleshy, plano-depressed, smooth, viscid, variegated; flesh yellow, under the cuticle violet; stem stuffed, fibrillose, shining, yellow, purplish above; bulb marginate; gills adnate, somewhat crowded, quite entire, ferruginous purple.—*Fr. Epicr. p. 266. Saund. & Sm. i. t. 10.*

In woods.

Stem 3 in. high, $\frac{1}{2}$ in. thick. Pileus 3-4 in. broad, purplish, disc yellow, at length spotted with lilac and repand.—*Fries.* Spores, with an apiculus at both ends, 0004×0003 in.

497. Cortinarius (Phlegmacium) turbinatus. Fr. "Top-shaped Cortinarius."

Pileus fleshy, plane, then depressed, even, viscid, of one colour, smooth, growing pale; flesh white, soft; stem stuffed, sub-equal, shining, whitish; bulb marginate; gills attenuated, isabelline, then ferruginous.—*Fr. Epicr. p. 266. Bull. t. 110. Eng. Fl. v. p. 31*.*

In woods. King's Cliffe.

[S. Carolina.]

Pileus 2-3 in. broad, convex, scarcely umbonate, at length often depressed, viscid when moist, at length shining, very even, yellow tawny, carnose, cuticle easily peeling off. Gills numerous, yellowish, then cinnamon, acutely adnate. Stem 2-3 in. high, $\frac{1}{2}$ in. or more thick, bulbous at the base, and often marginate, solid, not the least violet.—*M. J. B.*

498. Cortinarius (Phlegmacium) fulgens. *Fr.* "Shining Cortinarius."

Pileus fleshy, plane, equal, silky-fibrillose, viscid, flesh at length spongy, tan coloured; stem stout, bulb depressed, marginate, yellow, woolly, filamentose, at length pulverulent, ferruginous; gills emarginate, somewhat tawny.—*Fr. Epicr. p. 267. B. & Br. Ann. N.H. 1865, no. 1012. Saund. & Sm. t. 12.*

In pine woods, &c. Sept. Bathford Down.

Stem woolly, when young moist, viscid. Gills somewhat crowded, quite entire, at first yellowish, then ferruginous. Pileus 2-3 in. broad, sometimes squamulose. Spores with an apiculus at both ends, 00036×0002 in.

(fig. 41, reduced.)

499. Cortinarius (Phlegmacium) scaurus. *Fr.* "Club-footed Cortinarius."

Pileus fleshy, equal, smooth, tiger-spotted, viscid, becoming pale, margin thin, at length somewhat striate; stem solid, spongy at the base, then marginato-bulbose, attenuated, striate, growing pale; gills attenuated, adnate, rather thin, crowded, purplish, then olivaceous.—*Fr. Epicr. p. 268. Berk. Outl. p. 186. Eng. Fl. v. p. 86.*

In woods. King's Cliffe.

[S. Carolina.]

Soft, insipid. Pileus 2-3 in. broad, sometimes depressed; gills rather thin, at length cinnamon. Stem about 3 in. high, fibrillose, sometimes marginato-bulbous, when growing amongst moss nearly equal.—*Fries.*

500. Cortinarius (Phlegmacium) prasinus. *Fr.* "Leek-green Cortinarius."

Pileus compact, equal, viscid, variegated with scale-like spots; stem solid, short, firm, base marginato-bulbose, pallid greenish, as well as the veil; gills rounded, rather distant, yellow-olive.—*Fr. Epicr. p. 268. Schæff. t. 218. Vent. t. 23, f. 1-3.*

In beech woods.

Stem short, solid, very thick, pale greenish, not violet, flesh greenish-white. Pileus very obtuse, regular, viscid, spotted, sometimes bluish-green, sometimes dingy brown, margin regularly involute; flesh dirty white; gills emarginate, not crowded, yellowish olive or olivaceous, base darker, cinereous-olive.

Sub-Gen. 2. MYXACIUM, Fr. Epicr. p. 273.



Fig. 42.

Pileus glutinous; veil (and consequently the stem) viscid, polished when dry.

(Fig. 42, reduced.)

501. Cortinarius (Myxadium) collinitus. *Fr. "Smeared Cortinarius."*

Pileus fleshy, convex, then expanded, obtuse, even, glutinous, shining; stem firm, cylindrical, transversely squamose from the breaking up of the glutinous floccose veil; gills adnate, clay-coloured, or grey, then cinnamon.—*Fr. Epicr. p. 274. Sow. t. 9. Bull. t. 549, 596. Buxb. iv. t. 9. Batsch. f. 197, C. var. Eng. Fl. v. p. 93. Vent. t. 32, f. 4-6.*

In woods. Common.

[S. Carolina.]

Gills and stem sometimes purplish, sometimes without any purple tint, except when very young. Pileus 3 in. broad, expanded, very slimy, shining when dry, tawny-ochraceous, margin thin; gills broad, ventricose, rounded behind and adnate with a tooth, connected by veins, distant; stem 4 in. high, $\frac{3}{4}$ in. thick, solid, white within, except at the base, which is rhubarb-coloured without, covered below with a white silky, slimy coat, broken transversely into scales, beneath which it is rhubarb-coloured; fibrillose above the obsolete ring.—*M. J. B. Spores '00038 \times '00022 in. (Fig. 42, reduced.)*

502. Cortinarius (Myxadium) elatior. *Fr. "Tall Cortinarius."*

Pileus cylindrical, then expanded, viscid, disc rather fleshy, even, otherwise membranaceous, and plicato-rugose; stem elongated, soft, stout, attenuated at either end, squamose from the torn veil; gills adnate, broad, connected by veins, and rugose, brownish-ferruginous.—*Fr. Epicr. p. 274. Berk. Outl. p. 186.*

In woods. Common.

Stem solid, soft, 5-7 in. long, $\frac{1}{2}$ in. and more thick, commonly attenuated, longitudinally fibrous; pileus about 3-4 in. broad, when moist livid yellow, when dry dingy ochre, but variable in colour, whitish, tan colour, bright brown, violet-brown, &c.; gills sub-distant, at first 3 lines broad, afterwards broader.

503. Cortinarius (Myxadium) stillatitius. *Fr.* "Dripping Cortinarius."

Pileus thin, convexo-plane, subumbonate, even; stem hollow, very soft, equally attenuated, at first covered with a blue gluten; gills emarginate, somewhat distant, broad, ferruginous, cinnamon.—*Fr. Epicr. p. 277. Saund. & Sm. t. 3.*

In mossy places.

Stem 2, scarcely 3 in. long, 3-4 lines thick. Pileus slightly fleshy, scarcely 2 in. broad, even, smooth, covered with a blue gluten, afterwards livid brown, and at length greyish-white. Flesh soft, watery, hygrophanous.

504. Cortinarius (Myxadium) livido-ochraceus. *B.*
"Livid ochrey Cortinarius."

Pileus plane, submembranaceous, viscid, margin not striate; stem attenuated at either end, subsquamose, striate above the fugitive veil, stuffed with cottony fibres; gills cinnamon, sub-adnexed, broad in front.—*Berk Outl. p. 187. Eng. Fl. v. p. 89.*

In woods. King's Cliffe. Coed Coch.

Pileus 1 in. across, quite smooth, shining, covered with a thick sub-cartilaginous skin, the margin very thin but not striate, plane, livid-ochraceous; edge with a few indistinct fragments of the veil; gills cinnamon, the extreme margin pale, moderately distant, broad in front, appearing as if adnexed; stem 1 in. high, $\frac{3}{8}$ thick in the middle, where it is swollen, attenuated below, silky, beautiful violet, ochraceous at the base; sub-squamose, portion above the obsolete ring striate, stuffed with cottony fibres. Inodorous.—*M. J. B.*

Sub-Gen. 3. INOLOMA. Fr. Epicr. p. 278.



Fig. 43.

Pileus fleshy, subcompact, perfectly dry, with no viscid pellicle; silky with scales, or innate fibres, not hygrophanous; stem bulbous.

The species are handsome and easily distinguished.

(Fig. 43.)

505. Cortinarius (Inoloma) violaceus. *Fr.* "Violet Cortinarius."

Dark violet ; pileus fleshy, obtuse, villososquamous ; stem bulbous, spongy, villous, internally cinereous violet ; gills fixed, broad, thick, distant, darker.—*Fr. Epicr. p.* 279. *Eng. Fl. v. p.* 85. *Huss. i. t.* 12. *Sv. Bot. t.* 288. *Hedw. obs. t.* 4. *Bull t.* 250. *Smith, E.M. f.* 12. *Hogg & Johnst. t.* 6. *Vent. t.* 38, *f.* 1-3.

In woods. Esculent.

[United States.]

Pileus 4 in. or more across, obtuse, expanded, gills when young deep violet, almost black, stem 4 in. high, when young submentose.—*Fries.*

506. Cortinarius (Inoloma) camphoratus. *Fr.* "Strong-scented Cortinarius."

Pileus fleshy, obtuse, lilac, silky, then smooth and discoloured ; stem bulbous, dry ; base white within, becoming bluish as well as the veil ; gills thin, crowded, bright cœrulean, then purplish.—*Fr. Ep. p.* 280. *B. & Br. Ann. N. H.* (1866), *no.* 1128.

On the ground in woods. Sept. Fineshade.

Stem solid, soft, bulbous or obclavate, 3-5 inches long, $\frac{1}{2}$ -1 in. thick, woolly when young, violet, white within at the base. Pileus 2-3 in. broad, at first silky, lilac, then smooth and discoloured (whitish, yellowish, &c.), not hygrophanous ; flesh blue, gills decurrent or emarginate. Odour strong and foetid.

507. Cortinarius (Inoloma) callisteus. *Fr.* "Stout Cortinarius."

Yellowish tawny ; pileus fleshy, convex, then plane, rather smooth, even, and innato-squamulose ; margin rather silky ; flesh yellowish-white ; stem elongated, bulbous, tawny fibrillose ; gills adnate, floccose, connected behind.—*Fr. Epicr. p.* 281. *A. validus B. Eng. Fl. v. p.* 84. *Saund. & Sm. t.* 3.

In woods. Rare.

Pileus 4 in. broad, fleshy, margin thin, deep tawny inclining to ferruginous, at first convex, flatly hemispherical, or sub-campanulate, very obtuse, at length expanded, plano-convex, clothed with very minute reflexed scales ; flesh whitish, partaking very slightly of the colour of the pileus ; margin at first subinvolute. Gills $\frac{3}{8}$ in. broad, brittle, undulate, nearly horizontal, adnate, soon starting from the stem, and connected with it by a few fibres, very minutely emarginate, pale tawny, clouded with the spores. Stem 4 in. high, nearly 1 in. thick in the centre, $1\frac{1}{4}$ at the base, bulbous, fibrillose from the remains of the fugacious veil, which forms in the very young plant a slight extremely evanescent ring, which is coloured by the spores, solid, tawny like the pileus. At the base are a few strong roots. There is not the slightest tinge of purple or violet in any stage of growth.—*M.F.B.* Spores $\cdot 0003 \times \cdot 00022$ in. (Fig. 43, reduced.)

- 508. Cortinarius (Inoloma) Bulliardi.** *Fr.* "Red-rooted Cortinarius."

Pileus fleshy, campanulato-convex, sub-gibbous, even or squamulose, rufescent; stem bulbous, short, firm, vermilion below, with fibrils of the same colour, apex whitish; gills adnexed, broad, purplish, then ferruginous.—*Fr. Epicr. p. 282. Bull t. 431, f. 3. B. & Br. Ann. N.H. no. 693, 1128 **.

In woods. Sept. Fineshade, Bristol.

Remarkable for its bright red mycelium. Stem solid, 2-3 in. long, $\frac{1}{2}$ in. thick. Pileus obtuse, 2-3 in. broad, dry, dark rufescent or sanguineous brown. Gills 3 lin. broad, rather crowded, purplish then ferruginous, edge crenulate (whitish). Flesh pallid.

- 509. Cortinarius (Inoloma) bolaris.** *Fr.* "Collared Cortinarius."

Pileus fleshy, obsoletely umbonate, growing pale, variegated with saffron-red, adpressed, innate, pilose scales; stem stuffed, then hollow, nearly equal, squamose, of the same colour; gills sub-decurrent, crowded, watery cinnamon.—*Fr. Epicr. p. 282. Pers. Ic. pict. t. 14, f. 1. Berk. Outl. t. 19, f. 1. Ann. N. H. no. 69.*

In Beech woods. Sept. and Oct. Rare. King's Cliffe. Argyllshire.

Stem hard, equal, 2-3 in. long, 3-5 lines thick, straight, curved, or flexuose. Pileus 1-2 in. broad and upwards, reddish yellow, growing paler; variegated with red maculæform adpressed scales. Flesh firm white.

- 510. Cortinarius (Inoloma) pholideus.** *Fr.* "Scaly Cortinarius."

Pileus fleshy, expanded, obtuse, umbonate, fawn coloured, densely squamulose with innate, blackish, fasciculated hairs; stem attenuated, transversely squarrose with sooty-brown scales, even and violet above the veil; gills sub-emarginate, crowded, violet then clay-coloured cinnamon.—*Fr. Epicr. p. 283. A. & S. t. 12, f. 1. Ann. N.H. no. 272.*

In woods. King's Cliffe.

[United States.]

Stem solid, 3-4 in. long, 3-6 lin. thick, attenuated upwards. Pileus 2-4 in. broad, sub-umbonate, depressed about the umbo, fawn coloured, growing pale. Flesh pallid. Gills 2-4 lin. broad.

- 511. Cortinarius (Inoloma) sublanatus.** *Fr.* "Woolly Cortinarius."

Pileus fleshy, campanulate, then expanded, umbonate, tan coloured, inclining to brown, clothed with innate, pilose scales;

stem bulbous, attenuated, smooth above, pallid, squamose below with brownish down; gills sub-adnate, scarcely crowded, yellowish-olivaceous.—*Fr. Epicr. p. 283. Sow. t. 224. Huss. ii. t. 22. Eng. Fl. v. p. 84.*

In woods. Oct. Rare.

Smell like that of radishes. Pileus 3 in. broad, at length broadly and obtusely umbonate, colour variable, scales brownish or white, sometimes silky, adpressed; gills adnate or emarginate. Stem 3 in. high, yellowish-pallid, sometimes violet above.—*Fries.*

512. Cortinarius (Inoloma) arenatus. P. "Sandy Cortinarius."

Pileus fleshy, convex, at first gibbous, granulated with floccose scales, light red, then brownish; stem clavato-attenuated, beyond the middle clad with brown scales, apex even, pallid; gills emarginate, ventricose, rather crowded, yellowish-cinnamon.—*Fr. Epicr. p. 283. Bull. t. 586. Huss. i. t. 72.*

In woods. Coed Coch.

This cannot be distinguished safely from *C. pholideus* except when the specimens are young, in which case the colour of the gills is distinctive.—*M. J. B.*

Sub-Gen. 4. DERMOCYBE, Fr. Epicr. p. 283.



Fig. 44.

Pileus thin, but fleshy, with no viscid pellicle, entirely dry, not hygrophanous, at first clothed with a superficial down, then glabrous; stem thin, somewhat stuffed, equal or attenuated, not bulbous; gills changeable in colour.

The species are polymorphous and defined with difficulty, in consequence of the changeable colour of the gills.

(*Fig. 44.*)

513. Cortinarius (Dermocybe) ochroleucus. Fr. "Pallid Cortinarius."

Pileus fleshy, convex, gibbous, then obtuse, even, nearly smooth, pallid-white; stem solid, firm, ventricose, white, fibrillose above, veiled; gills adnexed, nearly free, crowded, whitish, clay-coloured ochre.—*Fr. Epicr. p. 284. Schæff. t. 54.*

In woods. Rare. Mossburnford. [United States.]

Stem solid, 3 in. long, $\frac{1}{2}$ in. thick, naked, white, apex and veil fibrillose. Pileus 2 in. broad, minutely silky, then smooth, pallid, at length nearly white. Flesh firm, white.

514. Cortinarius (Dermocybe) tabularis. *Fr.* "Flat Cortinarius."

Pileus fleshy, equal, soon plane, flocculose, then smooth, brownish clay-coloured, becoming pale; stem stuffed, tough, elastic, white, closely fibrilloso-squamose or smooth; gills emarginate, crowded, whitish, then clay-coloured.—*Fr. Epicr. p.* 284. *Bull. t.* 431, *f.* 5.

In woods. Common.

Stem stuffed, at length hollow, tough, elastic, attenuated at the base or equal, 2-3 in. long, 3 lin. and more thick, erect; veil whitish, fugacious; pileus 3 in. or more broad, clay-coloured, then brownish clay colour, growing pale. Gills 3 lin. broad. Flesh white.

515. Cortinarius (Dermocybe) diabolicus. *Fr.* "Tawny Cortinarius."

Pileus fleshy, thin, hemispherical, obtuse, then gibbous, brownish, clothed with grey threads, at length smooth, yellowish tawny; stem stuffed, rather thin, smooth, growing pale, bluish-grey above; gills sub-emarginate, adnexed, crowded, pallid (whitish or fugacious blue-grey), then clay-coloured.—*Fr. Epicr. p.* 285.

In woods.

Stem 3 in. long, usually slender, 2 lin. thick, sometimes twice that thickness. Pileus 1 in. broad and more, dry, fragile, soon rimose; gills adnate, 2 lines and more broad, firm.

516. Cortinarius (Dermocybe) caninus. *Fr.* "Rufous Cortinarius."

Pileus fleshy, convexo-plane, obtuse, becoming smooth, bright-rufous, changing colour; stem clavato-bulbose, elastic, closely fibrillose, pallid, violaceous above; gills emarginate, broad, rather distant, purplish, then cinnamon.—*Fr. Epicr. p.* 285. *Bull. t.* 544: *f. i.* *Buxb. iv. t.* 22. *Saund. and Sm. t.* 15.

In woods. King's Cliffe.

Stem stuffed, spongy within, at length hollow, 3 in. and upwards long, $\frac{1}{2}$ in. thick, thickened at the base, somewhat bulbous. Veil in the perfect state double. Pileus 3-4 in. broad, firm, colour variable, tawny, brown, or brick red. Flesh white, at length somewhat yellowish.

517. Cortinarius (Dermocybe) anomalus. *Fr.* "Thin-capped Cortinarius."

Pileus fleshy, thin, convex, obtuse, then gibbous, dingy-rufous, discoloured with evanescent fibrils; stem somewhat stuffed, thin, attenuated, fibrillose, rather scaly, pallid-violaceous; gills crowded, with a decurrent tooth, bluish-purple, then cinnamon.—*Fr. Epicr. p.* 286. *Bull. t.* 431, *f.* 3. *Letell. t.* 634. *Berk. Outl. t.* 12, *f.* 4. *Eng. Fl. v. p.* 86.

In woods. Common.

[United States.]

Pileus 1-2 in. broad, very obtuse, sometimes broadly, but very flatly umbonate, tinged at first with violet, minutely silky, so as to present a white satiny appearance, gradually changing to ochraceous or slightly tawny, flesh thick, except at the extreme margin, which has often traces of the arachnoid veil dusted with the spores; gills close, rounded behind, at first violet, at length pale ferruginous; stem $2\frac{1}{2}$ in. high, $\frac{3}{8}$ in. thick, in the middle subbulbous, more or less tinged with violet, solid, fibrillose, with more or less distinct, transverse, closely pressed, brownish scales, which originate in the veil, the top adorned with the descending fibres of the veil, which form a spurious ring; beneath this there is sometimes another red circle, which is the true ring.—*M. J. B.*

518. Cortinarius (Dermocybe) spilomeus. *Fr.* "Scaly-stemmed Cortinarius."

Pileus slightly fleshy, gibbous, dry, becoming smooth, brownish, changing colour; stem nearly hollow, thin, white or lilac, variegated with rufous or tawny scales; gills emarginate, crowded, narrow, bluish-lilac, pallid, at length cinnamon.—*Fr. Epicr. p.* 287. *Eng. Fl. v. p.* 85. *Sow. t.* 384, *f.* 1?

In woods. King's Cliffe, Bristol.

[United States.]

Pileus 1 in. broad, slightly fleshy, colour various, when young whitish, then ferruginous, tinged with fuscous, yellowish when dry. Gills violet, then lilac, at length cinnamon. Stem 2-4 in. high, 2-3 lines thick, white, tinged with violet.—*Fries.*

519. Cortinarius (Dermocybe) sanguineus. *Fr.* "Blood-red Cortinarius."

Pileus fleshy, thin, obtuse, innate, silky, or squamulose; stem stuffed, then hollow, thin, equal, as well as the veil, dark blood-red; gills crowded, rather broad, darker.—*Fr. Epicr. p.* 288. *Jacq. Coll. ii. t.* 15, *f.* 3. *Sow. t.* 43. *Bolt. t.* 56. *Eng. Fl. v. p.* 87. *Krombh. t.* 2, *f.* 28, 30. *Fl. Boruss. t.* 385.

In woods.

Pileus about 1 in. across, convex, blood-red; gills sometimes adnate, sometimes emarginate; stem stuffed, then hollow.—*Fries.* Dried specimens retain their colour many years. Spores 00025×00017 in.

520. Cortinarius (Dermocybe) cinnamomeus. *Fr.* "Cinnamon Cortinarius."

Pileus fleshy, thin, obtuse, umbonate, cinnamon-brown, silky with innate yellowish fibrils, or squamulose, at length becoming smooth; stem stuffed, then hollow, thin, equal; flesh and veil yellowish; gills adnate, broad, crowded, shining.—*Fr. Epicr. p.* 288. *Krombh. t.* 71, *f.* 12-15. *Letell. t.* 652. *Bolt. t.* 156. *Sow. t.* 205. *Vars. Eng. Fl. v. p.* 88. *Mag. Zool. & Bot. no.* 49.

In woods.

[United States.]

Pileus 1-2½ in. broad, convex, or even obtusely conical when young, becoming nearly plane, obtusely umbonate, deep reddish-cinnamon, often cracking at the margin, which is thin and sometimes fibrillose, smooth, somewhat fleshy; flesh yellowish; gills numerous, adnate, yellow cinnamon, broad, margin often notched; stem 2-3 in. high, 2-4 lines thick, equal, fibrillose, yellow, solid, hollow in old plants.—*Grev.*

(*Fig. 44, reduced.*)

521. Cortinarius (Dermocybe) uliginosus. *Berk.* "Bog Cortinarius."

Pileus campanulato-conical, then expanded, bright red brown, very strongly umbonate, silky, sometimes streaked, flesh yellow-olive, then cinnamon; stem flexuous, paler than the pileus; gills distant, adnate with a tooth, yellow, then olive, then cinnamon.—*Berk Outl. p.* 191.

In boggy woods amongst *Sphagnum*. King's Cliffe.

Pileus not exceeding 2 in. in diameter, of a beautiful red brown (almost brick-red), and remarkable for its very strong but scarcely acute umbo.—*M. J. B.*

522. Cortinarius (Dermocybe) raphanoides. *Fr.* "Olive Cortinarius."

Olivaceous, then discoloured; pileus fleshy, campanulate, then expanded, gibbous, silky with innate fibrils; stem stuffed, firm, fibrillose, opaque, and veil paler; gills adnato-ventricose, rather crowded, olivaceous then cinnamon.—*Fr. Epicr. p.* 290. *Mich. t.* 75, *f.* 2? *Eng. Fl. v. p.* 88.

In beech and fir woods. Scotch Highlands.

Pileus 2 in. broad, when moist brownish-olive, when dry yellowish-olive, convex at first, then expanded. Gills broad, darker, adnate, or emarginate; stem 3 in. high, 4 lines thick, subascending, fibrillose, villous at the base.—*Fries.*

Sub-Gen. 5. TELAMONIA. Fr. Epicr. p. 291.



Fig. 45.

Pileus moist, hygrophanous, at first glabrous or sprinkled with the arachnoid superficial fibres of the veil, thin or moderately compact in the disc; stem peronate, and annulate from an inferior veil. Mostly large and handsome. (Fig. 45.)

523. Cortinarius (Telamonia) bulbosus. *Fr.* "Bulbous Cortinarius."

Pileus somewhat fleshy, campanulate, then expanded, smooth, bright brown; disc fleshy, subgibbous; stem stout, bulbous, pallid, or paler than the pileus, veil white, peronate, subannulate; gills adnate, rather distant, opaque, cinnamon.—*Fr. Epicr. p. 292. Sow. t. 130. Eng. Fl. v. p. 84.*

In woods. Rare.

Pileus 2-3 in. broad, fibrillose under a lens, brittle, margin thin; gills rounded, subadnate, distinct, 3-5 lines broad. Stem 3-4 in. high, subfibrillose, in full grown specimens ferruginous at the base. Smell like that of radishes.—*Fries.*

524. Cortinarius (Telamonia) torvus. *Fr.* "Crabby Cortinarius."

Pileus fleshy, convex, then expanded, obtuse, pale-red brown, whitish with fibrils or scales, at length pierced, smooth; stem stout, sheathed with the white persistent veil, annulate, veil violaceous at the apex; gills thick, distant, very broad, purplish-umber then cinnamon.—*Fr. Epicr. p. 293. Bull. t. 600, f. Q. R. S. Krombh. t. 73, f. 19-21? Eng. Fl. v. p. 82.*

In woods.

Pileus 3 in. or more broad; stem 3-5 in. high, $\frac{1}{2}$ -1 in. thick, violet, but clothed below with the white veil.

525. Cortinarius (Telamonia) evernius. *Fr.* "Tufted Cortinarius."

Pileus between fleshy and membranaceous, conico-campanulate, then expanded, smooth, purplish-bay, reddish-white, at length fibrillose and torn; stem stout, cylindrical, soft, violaceous, scaly from the remains of the white veil; gills adnate, very broad, distant, purplish-violet.—*Fr. Epicr. p. 294. Sow. t. 125. Eng. Fl. v. p. 83.*

In woods.

Tufted or subgregarious. Pileus 1-2 in. broad, purple brown, shining with a satiny lustre, umbonate, the umbo generally subumbilicate; flesh moderately thick in the centre. Gills very broad, at length subferruginous, distant, adnate for half their breadth. Stem $2\frac{1}{2}$ -4 in. high, $\frac{3}{8}$ in. thick, undulated, silky, much paler than the pileus, with a few slight traces of the veil.—*M. J. B.*

526. Cortinarius (Telamonia) armillatus. *Fr.* "Red-zoned Cortinarius."

Pileus fleshy, campanulate, then expanded, soon innato-fibrillose and scaly, torn, bright red brown, margin thin; stem solid, elongated, bulbous, fibrillose, rufescent, circled by a red zone; gills fixed, very broad, distant, pallid, then dark cinnamon.—*Fr. Epicr. p. 295. Bull. t. 527, f. 1. Huss. i. t. 19.*

In woods.

Stem solid, firm, 3-6 in. long, $\frac{1}{2}$ in. thick, remarkable for its blood-red zone. Pileus 3-5 in. broad, dry, brick red, at first smooth, soon innato-fibrillose or squamulose. Odour of radishes.

527. Cortinarius (Telamonia) limonium. *Fr.* "Lemon Cortinarius."

Pileus fleshy, convexo-plane, obtuse, smooth, tawny (ochraceous yellow), at length rivuloso-squamulose; stem solid, firm, equal; veil fioccoso-squamose, of the same colour; gills adnate, emarginate, rather distant, yellow, then tawny-cinnamon.—*Fr. Epicr. p. 296. Holms. ii. t. 40. Eng. Fl. v. p. 84.*

In pine woods.

Pileus 2-4 in. broad, when dry ochrey-yellow, subsquarrose; gills sometimes adnate, sometimes emarginate, veil rarely forming a perfect ring. Stem 2-4 in. high, $\frac{1}{2}$ in. thick, firm, fibrillose, dull yellow, sometimes saffron-red.—*Fries.*

528. Cortinarius (Telamonia) hinnuleus. *Fr.* "Fawn Cortinarius."

Pileus between fleshy and membranaceous, conico-campanulate, then expanded, sub-umbonate, smooth, pallid, tawny cinna-

mon, at length pierced; stem stuffed, rigid, tawny, attenuated downwards, girt above by the white silky veil; gills sub-emarginate, distant, broad, thin, quite entire, tawny-cinnamon.—*Fr. Epicr. p. 296. Sow. t. 173.*

In woods. Common.

Stem sometimes short, about 1 in. sometimes 2 in. long, 2-3 lines thick, and sometimes 3-4 in. long and flexuous. Pileus obtuse or obtusely umbonate, pale tawny cinnamon, growing paler, shining when dry. Flesh of the same colour. (*Fig. 45, reduced.*)

529. Cortinarius (Telamonia) gentilis. *Fr.* "Delicate Cortinarius."

Pileus rather fleshy, conical, then expanded, acutely umbonate, even, smooth, at length cracked; stem slender, equal, squamose, with tawny-cinnamon (yellowish) scales, and oblique; ring yellow; gills adnate, thick, very distant, quite entire, tawny-cinnamon, of one colour.—*Fr. Epicr. p. 297. Br. Bath. Trans. 1870, p. 72. Fr. Mon. Hym. ii. p. 87.*

In pine woods. Box. Hanham.

Gregarious, tawny-cinnamon. Stem 2 lines thick, nearly straight, usually attenuated at the base. Pileus $\frac{1}{2}$ -1 in., rarely more, frequently squamulose, of the same colour as the stem, hygrophanous, when dry bright yellow and silky.

530. Cortinarius (Telamonia) helvelloides. *Fr.* "Thick-gilled Cortinarius."

Pileus rather fleshy, thin, sub-convex, obsoletely umbonate, ferruginous, at length rimose. Stem fistulose, slender, undulate, silky-fibrillose, as well as the veil yellowish, gills adnate, very distant, violaceous-umber then cinnamon, edge whitish-floccose.—*Fr. Epicr. p. 297. Ann. N.H. no. 929.*

In woods.

Stem fistulose, 2-3 in. long, 1-2 lin. thick, equal, veil yellowish, about the margin of the pileus silky. Pileus $\frac{1}{2}$ -1 in. broad, striate, when mature rimose and squarrose, tawny when dry. Gills adnate, very thick and distant.

531. Cortinarius (Telamonia) periscelis. *Weinm.* "Lilac and White Cortinarius."

Pileus campanulate, then convex, lilac and white, silky, umbo fleshy, elsewhere membranaceous; stem equal, fibrillose, of the same colour; veil woven, brownish, sub-annulate; gills adnate, crowded, narrow pallid, then obscurely ferruginous.—*Fr. Epicr. p. 300. Ann. N.H. no. 694.*

In bogs or under beech. Bowood.

Stem 3-4 in. long, 2-3 lines thick, straight, brownish when dry, whitish villous at the base. Pileus 2 in. broad, hygrophanous.—*Fries*.

532. Cortinarius (Telamonia) psammocephalus. *Fr.* "Little Tawny Cortinarius."

Tawny cinnamon; pileus rather fleshy, convex then expanded, at length umbonate, furfuraceo-squamulose, stem stuffed, attenuated, squamulose, sheathed with the contiguous veil; gills adnate, arcuate, crowded.—*Fr. Epicr. p.* 301. *Bull. t.* 531, *f.* 2. *Ann. N.H. no.* 695.

In woods. King's Cliffe.

Pileus about an inch across. Stem one inch long, gills darker than the pileus, flesh of the same colour, not white.

533. Cortinarius (Telamonia) ileopodius. *Fr.* "Tan-coloured Cortinarius."

Pileus rather fleshy, convex, subumbonate, at first with silky-white threads, becoming smooth, light reddish-yellow (tan coloured), at length even and rimose; stem equal, thin, tawny (without and within), sheathed with a pallid veil, naked upwards, fibrilloso-striate; gills adnate, somewhat crowded, thin, inclining to cinnamon.—*Fr. Epicr. p.* 301. *Bull. t.* 586, *f.* 2, *A. B. Eng. Fl. v. p.* 88.

In woods. July—Nov.

[United States.]

Pileus $\frac{3}{4}$ in. broad, at first conic, with the silky veil attached to the margin, then convex, rather acutely umbonate, the umbo cinnamon, then brownish, changing to ochraceous, sub-carnose, silky, especially on the margin, which is pellucid when moist; gills at first pale, changing to dark cinnamon. Stem 2 in. or more high, scarce 1 line thick, rufescent, pruinose, or sericeo-squamulose, moderately tough, at length hollow.—*M. J. B.*

534. Cortinarius (Telamonia) hemitrichus. *Fr.* "Fringed Cortinarius."

Pileus somewhat fleshy, convexo-plane, umbonate, brown (tan coloured), margin fringed or silky with dense white superficial fibrils; stem hollow, nearly equal, pallid, brown, floccoso-squamose from the white veil, and annulate; gills adnate, crowded, clay coloured, then cinnamon.—*Fr. Epicr. p.* 302. *Ann. N.H. no.* 930.

In woods. Sept. Lea.

[S. Carolina.]

Stem $1\frac{1}{2}$ -2 $\frac{1}{2}$ in. long, thick, firm; pileus acute or obtuse, 1-3 in. broad, with the margin fringed, or altogether covered with superficial erect white fibrils, becoming smooth, colour dark brown, tan coloured when dry.

Sub-Gen. 6. HYGROCYPE. Fr. Epicr. p. 303.

Fig. 46.

Pileus generally thin, glabrous, hygrophanous, but not viscid, cuticle rigid, not fibro-lacerate; stem rigid, subcartilaginous without, never annulated or scaly.

(Fig. 46.)

535. *Cortinarius (Hygrocybe) Armeniacus.* Fr. "Peach Cortinarius."

Pileus somewhat fleshy, convexo-plane, gibbous, even, smooth, tawny-cinnamon (at length tan coloured), shining; stem stuffed, conical, attenuated, rigid, soft within, as well as the sub-peronate veil white; gills adnate, crowded, pallid, then tawny cinnamon.—*Fr. Epicr. p. 304. Schæff. t. 81. Eng. Fl. v. p. 88. Ann. N.H. no. 696.*

In pine woods.

[United States.]

Pileus 2-4 in. broad, campanulate, soon convex, expanded, sometimes acutely umbonate, margin thin, patent, moist, not viscid, when dry tan, inclining to light red; gills distinct, 2-3 lines broad, when young watery-cinnamon; stem 2-3 in. high, 2 lines-2 in. thick, rather soft, sometimes violet above, conic or sub-equal, veil rather woven.—*Fries.*

536. *Cortinarius (Hygrocybe) dilutus.* Fr. "Bolton's Cortinarius."

Pileus somewhat fleshy, convexo-plane, sub-umbonate, smooth, even, opaque, light red; stem stuffed, then hollow, soft, pallid, thickened at the base, veil fibrillose; gills emarginate, adnexed, broad, crowded, pallid cinnamon.—*Fr. Epicr. p. 305. Bolt. t. 10.*

In woods. Halifax.

Not found since the time of Bolton. Stem 2-3 in. long, 2-4 lines thick, whitish, at first silky, then becoming smooth. Pileus about 2 in. broad; when moist of a brick-red, tan-coloured when dry, but variable, in either state opaque. Gills deeply emarginate, very ventricose, 3-4 lin. broad, crowded.

537. Cortinarius (Hygrocybe) castaneus. *Fr.* "Chestnut Cortinarius."

Pileus somewhat fleshy, firm, campanulate or convex, then expanded or gibbous, even, chestnut (shining); stem cartilaginous, stuffed, then hollow, even, violaceous, or pallid-rufescent; veil white, fibrillose; gills fixed, ventricose, rather crowded, violet, then ferruginous.—*Fr. Epicr. p.* 307. *Bull. t.* 268. *Eng. Fl. v. p.* 89.

In woods and gardens. Common. Esculent.

[United States.]

Gregarious. Pileus 1 in. or more broad, sub-carnose, at first obtuse, with a delicate fibrillose veil, which makes the margin appear silvery, dark bay or dirty violet, sometimes with a tawny tint, soon expanded, broadly umbonate; umbo more or less obtuse; gills of the colour of the pileus, or purplish umber, at length sub-ferruginous, ventricose, adnate. Stem 1½ in. high, 2 lines thick, beautifully fibrillose, and white from the veil beneath, much paler than the pileus, but with more or less of the same tint, sometimes tinged with violet. Odour none; taste like *Marasmius oreades*.—*M. J. B.*

538. Cortinarius (Hygrocybe) Reedii. *Berk.* "Reed's Cortinarius."

Pileus conical, then expanded and strongly umbonate, smooth, shining, persistently brown, disc areolate, margin splitting; stem white, solid, fibrilloso-striate, slightly bulbous; veil fibrillose, evanescent; gills broad, ventricose, ascending, attenuated behind, free, white or pallid, then cinnamon.—*Berk. Outl. p.* 194. *Huss. ii. t.* 45.

Amongst moss and beech mast. May. Hayes. Surrey.

Stem 1½-2 in. high. Flesh pallid. Tasteless and scentless.

539. Cortinarius (Hygrocybe) rigens. *Fr.* "Rigid Cortinarius."

Pileus somewhat fleshy, conical, soon convex, obtuse, even, smooth, opaque, clay-coloured; stem cartilaginous, rigid, rooting, smooth, naked, white, somewhat attenuated upwards; gills adnate, sub-decurrent, broad, distant, clay-coloured, then dark cinnamon.—*Fr. Epicr. p.* 311. *Ann. N.H. no.* 931.

In woods. Mossburnford.

Stem elastic, rigid, and tough, pallid when moist, white when dry, 2-4 in. long, 2-5 lin. thick. Veil scarcely manifest. Pileus 1-2 in. or more broad. Flesh rather firm, white.

540. Cortinarius (Hygrocybe) leucopus. *Fr.* "White-stemmed Cortinarius."

Pileus rather fleshy, conical, then expanded, at length umbonate, even, smooth, light red, shining; stem stuffed, then hollow, equal, white; gills sub-adnexed, ventricose, crowded, pallid, then cinnamon.—*Fr. Epicr. p. 311. Bull. t. 533, f. 2.*

In woods.

Stem 1-2 in. long, 2-4 lin. thick, soft, white. Pileus scarcely an inch broad, moist, but not viscid, light red, tan-coloured when dry. Gills adnexed, seceding, crowded, ventricose, pallid, then cinnamon, edge quite entire and of the same colour. (*Fig. 46, reduced.*)

541. Cortinarius (Hygrocybe) decipiens. *Fr.* "Deceptive Cortinarius."

Pileus submembranaceous, conical, smooth, shining, bay-brown (brick-red), at length depressed around the somewhat fleshy, prominent, darker umbo; stem sub-fistulose, equal, slender, covered with a pallid, separable cuticle, internally rather bright brown; gills adnate, thin, somewhat crowded, ferruginous brown. *Fr. Ep. p. 312. Pers. Syn. p. 289. B. & Br. Ann. N.H. (1866), no. 1129.*

In woods. Sept. King's Cliffe. [United States.]

Stem 2-4 in. long, 1-2 lines thick, straight or flexuose, pale rufous, or spotted with brick-red. Pileus about an inch broad, smooth, shining, bay, umbo darker, margin when mature finely striate.

542. Cortinarius (Hygrocybe) acutus. *Fr.* "Acute Cortinarius."

Pileus membranaceous, conical, acutely umbonate, striate, light reddish-brown (at length tan-coloured and even); stem fistulose, equal, slender, flexuose, growing pale, veil fugacious, white; gills adnate, rather crowded, thin, narrow, quite entire, ochraceous.—*Fr. Epicr. p. 314. Ann. N.H. no. 797.*

On moist spots in fir woods. [United States.]

Cæspitose, with the habit of a *Galera*. Stem slender, 3 in. or more long, 1-2 lines thick. Veil adhering to the margin, fibrillose, white.

543. Cortinarius (Hygrocybe) Junghuhnii. *Fr.* "Jung-huhn's Cortinarius."

Pileus rather fleshy, thin, conical, then expanded, papillate, clothed with innate, white, thin fibrils, persistently rather velvety, shining cinnamon; stem stuffed, equal, sub-flexuose, pale

red-brown, with shining, closely-pressed, brown fibrils; gills adnate, thin, ventricose, saffron yellow, then red brown.—*Fr. Ep. p. 314. B. & Br. Ann. N.H. (1866) no. 1130.*

In woods. Aug. King's Cliffe.

Stem 2-3 in. high, 2 lines thick, internally darker, base whitish. Veil obsolete. Pileus 1 in., striate to the middle when moist. Gills 2 lines broad, veined at the base. Spores .0003 in. long.

Gen. 5. LEPISTA. Smith. Seem. Journ. 1870.



Fig 47.

Spores (as well as the whole plant) dirty white; pileus with an involute margin gradually increasing indefinitely; stem continuous with the horny hymenophore; gills fragile, persistent, decurrent, anastomosing behind or branching, membranaceous, entire, with a sharp edge, supported by a horny trama. (Fig. 47.)

HAB. All the species are terrestrial.

The character of the spores, the presence of a trama, and the habitat of the section of *Lepista* of *Paxillus*, as established by Fries, appear to me to be so important that I have given it a generic position.—*W. G. S.*

544. Lepista nuda. Bull. "Amethyst Lepista."

Pileus fleshy, rather thin, convex, then expanded and depressed, obtuse, smooth, moist, changing colour; margin inflexed, thin, naked; stem stuffed, elastic, equal, rather mealy; gills rounded behind, or slightly decurrent, crowded, narrow, violet, stained when old with reddish-brown.—*Bull. t. 439. Fr. Epicr. p. 48. Krombh. t. 71, f. 27-29. Price. f. 35. Paul. t. 78, f. 3. Berk. Outl. t. 4, f. 7. Eng. Fl. v. p. 20.*

In plantations, woods, &c., especially among pines.

[United States.]

Smaller than *L. personata*, and more brightly coloured. Pileus 2 in. broad, thin, obtuse, plane or sub-depressed, at first amethyst-coloured, but changing to a pinky rufous, margin involute. Gills of the same colour as the pileus, rounded behind, sometimes adnate-decurrent, connected and traversed by veins. Stem 2 in. high, 3-4 lines thick, stuffed, sub-equal, at first fibrillose, at length nearly smooth, more or less of the colour of the pileus.—*M. J. B.* Spores dirty white, .0002 × .00013 in. (Fig. 47, reduced.)

545. *Lepista cinerascens.* Bull. "Cinereous *Lepista*."

Pileus fleshy, convex, then expanded, obtuse, smooth, even; margin thin, naked, striate; stem stuffed, elastic, sub-equal, smooth; gills rounded behind, crowded, rather undulated, veined at the base, easily separating from the pileus, white, then reddish-grey, at length yellowish.—*Bull. t.* 428, *f.* 2. *Fr. Epicr. p.* 50. *Ann. N.H. no.* 787.

In woods. Aug.

Cæspitose. Pileus 2-3 in. across, convex, of a dirty pale ochre, slightly streaked with watery lines, firm but not brittle, clothed with very obscure matted down, flesh thin, white. Stem curved, slightly streaked, tinged like the pileus, paler above, and slightly pulverulent, solid, stringy. Gills moderately distant, at first attenuated behind, at length rounded and easily separating, white, or very slightly ochraceous, stained like the pileus when old and bruised, very slightly anastomosing behind. Spores certainly not cinereous, but white. Smell rather disagreeable, pungent.—*M.J.B.*

546. *Lepista personata.* Fr. "Purple-stemmed *Lepista*."

Pileus at first compact, then soft, convex, then plane, obtuse, even, smooth, moist; margin at first involute, villosopruinose; stem solid, blunt, somewhat bulbous, villous, stained with lilac; gills rounded behind, then free, crowded, broad, dirty white.—*Fr. Epicr. p.* 48. *Berk. Outl. t.* 5, *f.* 1. *Smith. E.M.* 18. *Huss. ii. t.* 40. *Fl. Dan. t.* 1133. *Cooke, B.F. t.* 4, *f.* 1. *Eng. Fl. v. p.* 19. *Gard. Chron.* (1861), *p.* 696, *fig.* *Badh. i. t.* 8, *f.* 1, *ii. t.* 1, *f.* 2.

In pastures. Common. Esculent. [United States.]

Gregarious, frequently in large rings. Pileus 2-6 in. broad, fleshy, firm, pale bistre or purple lilac, occasionally violet, convex, obtuse, very smooth and shining as if oiled, but not viscid; margin involute, pulverulentotomentose; gills rounded, free, not distant, narrow in front, paler than the pileus, sometimes violet, turning to a dirty flesh colour, especially when bruised. Stem 1-3 in. high, $\frac{3}{4}$ in. thick, firm, bulbous, solid, mottled within towards the apex with watery spots, clothed more or less with villous fibrils, tinged with violet. Odour rather overpowering, taste pleasant.—*M.J.B.* Spores $\cdot 00024 \times \cdot 00016$ in.

The three British species included in this new genus were formerly classed by Fries with the sub-genus *Tricholoma*, but removed by him, in his latest work, to *Lepista*, as a sub-genus of *Paxillus*. We have followed Mr. W. G. Smith in his arrangement recently proposed in "Seemann's Journal of Botany," but not without some hesitation, in separating *Lepista* from *Paxillus*, and giving it a generic position.—*M.C.C.*

Gen. 6. PAXILLUS, Fr. Gen. Hymen. p. 8, *ex parte*.



Fig. 48.

Spores (as well as the whole plant) ferruginous; pileus with an involute margin, and gradually increasing indefinitely; stem continuous with the hymenophore; gills tough, soft, persistent, decurrent, anastomosing behind, or branching, membranaceous, entire, with a sharp edge, separating from the horny or furrowed hymenophore; trama absent.

HAB. Some on the ground, others on trunks of trees, sawdust, &c.

(Fig. 48.)

547. Paxillus involutus. Fr. "Involute Paxillus."

Pileus compact, convexo-plane, then depressed, moist, becoming smooth, margin involute and tomentose; stem fleshy, solid, firm, naked, thickened upwards, paler; gills branched, broad, porous and anastomosing behind, paler, besmeared and spotted.—Fr. *Epicr.* p. 317. *Batsch.* f. 61. *Sow.* t. 98. *Schæff.* t. 72. *Bull.* t. 240, 576, f. 2. *Krombh.* t. 71, f. 24-26. *Paul.* t. 61? 62, 63, f. 1. *Buxb.* iv. t. 26. *Schæff.* t. 71, var. *Berk. Outl.* t. 12, f. 5. *Ag. involutus*, *Eng. Fl.* v. p. 101. *Fl. Boruss.* t. 391. *Vent.* t. 42, f. 6-7.

On the ground. Common.

[United States.]

Pileus 3-5 in. broad, wavy, tawny or yellow-ferruginous when moist, slimy, uneven; margin involute and downy, the extreme edge striate from the pressure of the gills; flesh thick, firm, at first pale, changing to dirty umber on exposure to the air, as does every part of the plant when bruised, black when dried; gills pale yellow ferruginous, wavy forked, decurrent, poriform behind, easily separating from the pileus; stem 2-3 in. high, $\frac{1}{2}$ -1 in. or more thick, blunt, sometimes attenuated below, tomentoso-squamulose, firm, solid.—*M. J. B.* Spores 0.0026×0.002 in. (Fig. 48, reduced.)

548. Paxillus atro-tomentosus. Fr. "Dark-downy Paxillus."

Pileus fleshy, convexo-plane, then depressed or infundibuliform, granulose, rivulose; margin thin, involute; stem between spongiose and solid, firm, velvety; gills crowded, straight, branched behind.—Fr. *Epicr.* p. 317. *Batsch.* f. 32. *Nees.* f. 175. *Paul.* t. 33, f. 2-3. *Ann. N.H.* no. 697.

On pine stumps. Wilts.

Stem solid, elastic, 2-3 in. long, $\frac{1}{2}$ -1 in. thick, curved, ascending, rooting, clad with a dense, velvety, soft, blackish umber down; pileus compact, excentric, 2-4 in. or more broad, dry, ferruginous; gills adnate or decurrent, branched at the base and somewhat anastomosing, yellowish.

549. Paxillus panuoides. *Fr.* "Pale Paxillus."

Pileus fleshy, dimidiate, conchate, at length smooth, dirty yellow, elongated behind, sessile or stipitate; gills decurrent, crowded, branched, crisped, yellow.—*Fr. Epicr. p.* 318. *Buxb. ii. t.* 49, *f.* 2. *Sow. t.* 403. *Berk. Outl. t.* 12, *f.* 6. *Letell. t.* 665. *Eng. Fl. v. p.* 102.

In cellars, on sawdust, &c. Coed Coch, &c.

Pileus 1-4 in. broad, white, often tinged with violet, very soft to the touch in consequence of the fine-matted silky pubescence with which it is clothed, either perfectly sessile, or furnished with a spurious stem which is silky like the pileus and most beautifully tinged with violet; gills variously anastomosing and wrinkled, yellow with abundant oval ferruginous spores.—*M. J. B.* Spores '00018 \times '00013 in.

Gen. 7. **HYGROPHORUS**, *Fr. Epicr. p.* 320.

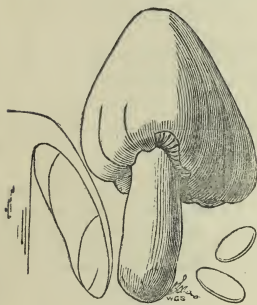


Fig. 49.

and *Gomphidius*, the spores are coloured, and the gills lose their colour.

This genus is distinguished by the hymenophore being changed into a waxy mass, and at length detached from the trama. Many species are sapid and edible.—*W. G. S.*

Spores white; veil, when present, universal; stem confluent with the hymenophore; gills sharp-edged; trama similar in substance to that of the pileus. (*Fig. 49.*)

HAB. On the ground, mostly late in the autumn, some in the summer.

Most of the species are handsome and easily recognized. From *Agaricus* this genus differs by the manifest trama, the substance of which is similar to that of the pileus; from *Lactarius* and *Russula* by the trama not being vesicular, but subfloccose, and intermixed with granules; and from its nearest ally, *Cantharellus*, by the sharp-edged gills. In *Cortinarius*, *Paxillus*,

Sect. 1. Limacium.

550. Hygrophorus chrysodon. *Fr.* "Yellow downy Hygrophorus."

White; pileus fleshy, convexo-plane, viscid, margin involute; stem stuffed, subequal, squamulose (yellowish), floccose above;

gills rather thin, distant, at length crisped.—*Fr. Epicr.* 320. *Batsch. f.* 212. *Fl. Dan. t. Ann. N.H. no.* 258.

In woods.

[S. Carolina.]

Resembles closely, in many respects, *H. eburneus*, but is beautifully distinguished by the golden yellow pubescence, which is sprinkled here and there over the plant, but principally on the stem and margin of the pileus. Sometimes the gills are elegantly edged with yellow flocci. Smell strong.

551. *Hygrophorus eburneus.* *Fr.* "Ivory *Hygrophorus*."

White; pileus fleshy, even, smooth, margin entire; stem stuffed, then hollow, unequal, punctate above with glandular scales; gills firm, distant, straight.—*Fr. Epicr. p.* 321. *Bull. t.* 551, *f.* 2. *Lenz. f.* 8. *Schæff. t.* 39. *Buxb. iv. t.* 30, *f.* 2. *Berk. Outl. t.* 15, *f.* 1. *Eng. Fl. v. p.* 13. *Price, f.* 19. *Krombh. t.* 61, *f.* 11-14.

In woods. Oct. Nov. Esculent.

[S. Carolina.]

Pileus 2-3 in. broad, shining when dry; stem at length hollow, very various in stature, flexuous in elongated specimens.—*Fries.* Spores 00017×00022 in.

552. *Hygrophorus cossus.* *Fr.* "Goat-moth *Hygrophorus*."

White; pileus fleshy, even, smooth, viscid, inclining to yellowish, margin naked; stem stuffed, subequal, furfuraceous above; gills thin, distant, straight.—*Fr. Epicr. p.* 321. *Sow. t.* 121. *Eng. Fl. v. p.* 13. *Mag. Zool. & Bot. no.* 40. *Berk. exs. no.* 2.

In woods. Oct. Strong scented.

Pileus $1\frac{1}{2}$ in. broad, pure white, slimy, shining when dry, stained here and there with yellowish, the disc sometimes sub-ochraceous. Gills broad, thick, distant, adnato-decurrent, connected by veins, and themselves slightly veined. Spores white, elliptic. Stem $2\frac{1}{2}$ in. high, 1-3 lines thick, nearly equal, here and there yellow when bruised. Smell like that of the larva of the goat-moth.—*M. J. B.*

553. *Hygrophorus cerasinus.* *B.* "Waxy *Hygrophorus*."

Pileus fleshy, convex, broadly umbonate, pale umber, then grey, viscid, margin minutely tomentose; stem white, solid, attenuated below, punctato-squamulose above; gills broad, decurrent, white, tinged with pink, sometimes forked, very distant.—*Berk. Outl. p.* 197. *Eng. Fl. v. p.* 12.

In fir plantations. Oct. Rare. Winkbourn, Notts.

Subregarious, sometimes three from the same root. Pileus $1\frac{1}{2}$ to $2\frac{1}{2}$ in. broad, pale umber, or ochraceous-bistre, inclining to grey when old, fleshy, convex, broadly umbonate, often more or less wavy, at length sometimes somewhat depressed, viscid, shining when dry; margin clothed with

minute white down, divided into little linear heaps by the pressure of the gills in the early stage of growth; gills broad, decurrent, white, with a slight tinge of ochre or flesh colour, thick, very distant, some of them forked. Stem 1-2 in. high, 2-6 lines thick, white, solid, generally attenuated below, punctato-squamulose above. Odour pleasant, like cherry laurel leaves.—*M. J. B.*

554. *Hygrophorus aromaticus.* B. “Aromatic Hygrophorus.”

Very tender; pileus fleshy, smooth, cinnamon, glutinous; stem stuffed, then hollow, reticulated; gills pinkish, decurrent when young.—*Berk. Outl. p. 198. Sow. t. 144. Eng. Fl. v. p. 14.*

Smell agreeable, spicy. Not found since the time of Sowerby.

Pileus 2-3½ in. broad, fleshy, generally covered with a thick glutinous skin, which becomes corrugated in drying, cinnamon, blackish, like the rest of the plant when bruised; gills pinkish. Stem 1½-3 in. long, 3-5 lines thick, hollow, and pithy. Whole plant when fresh so tender that it is difficult to gather. Odour agreeable, spicy. Taste watery, with a peppermint-like coolness in the mouth, and a lasting roughness in the throat.—*Sow.*

555. *Hygrophorus mesotephrus.* B. & Br. “Brown-disc Hygrophorus.”

Pileus convex, subhemispherical, hygrophanous, white, with a brown disc, striate, viscid, as well as the slender stuffed stem, which is floccoso-granulated above; gills decurrent, pure white.—*Ann. N.H. ser. ii. xiii. t. 15, f. 2. Berk. Outl. p. 198.*

In woods. Rare. Bowood.

Pileus about 1 in. across, convex, subhemispherical, white, with the disc brown, viscid, striate, the extreme margin often remaining quite even; flesh white, hygrophanous; stem about 2 in. high, 2 lines thick, flexuous, attenuated at the base, white, viscid, floccoso-granulated at the apex, stuffed with a fibrillose pith. Gills pure white, moderately broad, rather distant, ventricose, shortly decurrent. Spores 00035 in. long. In age the lower part of the stem slightly stained.—*B. & Br.*

556. *Hygrophorus arbustivus.* Fr. “Wood Hygrophorus.”

Pileus fleshy, convexo-plane, obtuse, viscid, innato-virgate, becoming tawny; stem solid, naked, equal, elastic, incurved, smooth, white, mealy above; gills adnate, distant, thick, firm, white.—*Fr. Epicr. p. 323. B. & Br. Ann. N.H. (1865), no. 932, 1013.*

In woods, under birch, &c. Dec. Wiltshire.

Pileus 2 in., brick-red or red-brown, margin paler. Stem 1½ in. and upwards. Gills scarcely decurrent. Odour and taste not unpleasant.

557. *Hygrophorus hypothejus.* Fr. "Pine-wood *Hygrophorus.*"

Pileus fleshy, clothed with thin olive evanescent gluten, somewhat virgate; stem stuffed, equal, somewhat spotted, viscid; gills distant, yellowish.—*Fr. Epicr. p.* 324. *Krombh. t.* 72, *f.* 24-25. *Sow. t.* 8. *A. & S. t.* 10, *f.* 3. *Buxb. iv. t.* 2. *Eng. Fl. v. p.* 14.

In pine woods, on sandy soil.

Pileus 1-4 in. broad, fleshy, at first conic, obtuse, at length expanded, and depressed round the umbo or even infundibuliform, covered with a thick dark gluten, yellow towards the margin and beneath the gluten, the extreme margin turned in. Flesh yellow, deeper towards the margin. Gills adnato-decurrent, yellow, sometimes varying to a flesh-coloured tint, distinct, distant. Stem $1\frac{1}{2}$ -3 in. high, 2-9 lines thick, flexuous, stuffed above, fibrillose below, slimy, submaculate, yellow. Odour fungoid, rather disagreeable.—*M. J. B.* Spores $\cdot 00049 \times \cdot 00017$ in.

558. *Hygrophorus olivaceo-albus.* Fr. "Olive *Hygrophorus.*"

Pileus fleshy, even, clothed with evanescent olivaceous gluten, umbo brown; stem solid, equal, at first with a floccose ring, spotted with dark scales, viscid, even above; gills white.—*Fr. Epicr. p.* 324. *Schæff. t.* 312. *Eng. Fl. v. p.* 13.

In woods and woodland pastures.

Pileus 2-3 in. broad, at first conic, then expanded, and broadly umbonate, livid olive brown, varied with tints of yellow and umber, very viscid; flesh thin on the margin, which is turned in, minutely downy, sometimes slightly grooved or striate. Gills adnate, scarcely decurrent, white, in decay greenish yellow, sometimes ventricose, veiny. Spores white, elliptic with a distinct border. Stem $1\frac{1}{2}$ -2½ in. high, $\frac{1}{4}$ -½ in. thick, generally curved, fibrous within, above granulato-fibrillose, pitted, covered with milky drops. Ring in general indistinct; sometimes the margin of the viscid veil which clothes the rest of the stem, marking it with irregular dark blotches, is visible; base of stem yellow.—*M. J. B.* Spores $\cdot 00018 \times \cdot 00027$ in.

Sect. 2. Camarophyllus.

559. *Hygrophorus leporinus.* Fr. "Hare-coloured *Hygrophorus.*"

Pileus equally fleshy, convex, gibbous, equal, fibrilloso-floccose, opaque; stem stuffed, short, firm, attenuated, fibrillose, pallid; gills decurrent, reddish-grey.—*Fr. Epicr. p.* 326. *Batt. Bt.* 9. *Schæff. t.* 313. *Ann. N. H. no.* 700.

On downs. Sept. Durdham Downs. Kent.

Stem rigid, 2 in. long. Pileus 1-2 in. broad, cuticle splitting into flocci, colour tawny, reddish yellow, &c. The spores have a pale umber tint, nearly globose, and about $\cdot 0002$ in. diameter.

560. Hygrophorus pratensis. Fr. "Pasture Hygrophorus."

Pileus convexo-plane, then turbinate, smooth, moist, disc compact, gibbous, margin thin; stem stuffed, even, attenuated downwards; gills deeply decurrent, arcuate, distant, thick.—*Fr. Epicr. p. 327. Fl. Dan. t. 1735, f. 1. Grev. t. 91. Krombh. t. 43, f. 7-10. Bull. t. 587, f. 1. Sow. t. 141. Bolt. t. 56. Huss. ii. t. 40. Eng. Fl. v. p. 39. Gard. Chron. (1861), p. 289. Berk. exs. no. 123.*

On downs and short pastures. Aug.—Nov. Esulent.

Pileus 1-2 in. broad, at length spreading towards the margin, but leaving the centre more or less convex, as if umbonate, glabrous, margin often cracked, frequently contracted or lobed, buffish-reddish, or brownish; flesh whitish, thick in the centre, thin at the margin; gills thick, distant, decurrent, connected by veins, separable from the flesh of the pileus. Stem 1-2 in. high, 3-8 lines thick, whitish, attenuated towards the base.—*Grev. Spores* '00023 \times '00015 in.

561. Hygrophorus virgineus. Fr. "Satin-white Hygrophorus."

Pileus fleshy, convexo-plane, obtuse, moist, at length areolato-rimose; stem stuffed, firm, short, attenuated at the base; gills decurrent, distant, rather thickened.—*Fr. Epicr. p. 327. Grev. t. 166. Jacq. Misc. ii. t. 15, f. 1. Sow. t. 32. Bull. t. 188. Batt. t. 19, H. Price. f. 41. Batsch. f. 200. var. Eng. Fl. v. p. 39. Krombh. t. 25, f. 1-3. Smith, E.M. f. 23.*

On downs and short pastures. Common. Esulent.

Pileus 1 in. or more broad, slightly viscid when moist, and shining as if oiled, with a satiny lustre when dry, white, sometimes with a tinge of yellow or pink, various in shape, sometimes umbonate, often quite plane or depressed, frequently obconic, margin more or less thin and transparent. Gills broad, distant, with very prominent connecting veins, adnato-decurrent, sometimes forked above. Stem 2 in. long, 1-2 lines thick, under a lens fibrillose, sometimes pulverulento-squamulose at the apex, stuffed, the centre fibrous, at length more or less hollow, white, with sometimes a tinge of pink at the base. Taste like *Marasmius oreades*.—*M. J. B.*

562. Hygrophorus niveus. Fr. "Snow-white Hygrophorus."

Tough. Pileus submembranaceous, campanulato-convex, then umbilicate, smooth, moist, striate, viscid; stem fistulose, thin, equal; gills decurrent, thin, arcuate, distant.—*Fr. Epicr. p. 327. Schæff. t. 232. Krombh. t. 25, f. 1-3.*

In mossy pastures. Common.

Stem equal, 2 in. long, 1-2 lines thick, even, smooth, straight. Pileus scarcely an inch broad, striate and viscid when moist, not rimose when dry. Flesh of the pileus thin, everywhere equal, white, hygrophanous. Gills distant, thin, scarcely connected by veins, arcuate, quite entire.

- 563. *Hygrophorus russo-coriaceus*. B. & Mill.** "Russian-leather *Hygrophorus*."

Sweet scented. Pileus very white, slightly viscid, convex, fleshy; stem slender, smooth, solid; gills broad, thick, arched, decurrent, very few, and distant.—*Berk. Outl.* p. 200. *Ann. N.H.* no. 332.

In exposed pastures. Rare.

Pileus about $\frac{1}{2}$ in. broad, convex, fleshy, slightly viscid, ivory white. Stem $\frac{3}{4}$ -1 in. high, not a line thick, incrassated upwards, smooth, solid, pure white; gills thick, broad arched, decurrent, very few and distant, with a few shorter ones intermixed. The whole plant exhales a strong musky smell like that of Russian leather.—*M. J. B.*

- 564. *Hygrophorus distans*. Berk.** "Distant-gilled *Hygrophorus*."

Pileus somewhat fleshy, plane or depressed, viscid, white, with a silky lustre, here and there stained with brown; stem white above, cinereous below, and attenuated, not spotted; gills few, very distant, subventricose, decurrent, pure white at first, then tinged with cinereous, interstices obscurely rugose.—*Berk. Outl.* p. 200, t. 13, f. 1. *Price.* f. 5. *H. clivalis*, *Fr. Mon. Hym.* ii. p. 134.

In woods. Rare.

About 2 in. across, often umbilicate, remarkable for the few and distant gills.

- 565. *Hygrophorus ovinus*. Fr.** "Sheep *Hygrophorus*."

Pileus fleshy, thin, conico-convex, then expanded, gibbous, viscid, then squamulose, brown; stem slightly stuffed, smooth, somewhat shining, thickened at either end; gills arcuato-decurrent, connected by veins, white, then dingy, edge thin.—*Fr. Epicr.* p. 328. *Bull. t.* 580. *Huss.* ii. t. 50. *Ann. N.H.* no. 262. *A. compressus*. *Sow. t.* 66.?

In pastures.

Stem about 2 in. long, 3 lin. thick, sub-equal, or slightly thickened at either end, curved or twisted, compressed, smooth, pallid, or blackish-brown; pileus 2 in. broad, at length revolute, undulate. Gills 3 lin. broad.

- 566. *Hygrophorus Colemannianus*. Blow.** "Coleman's *Hygrophorus*."

Pileus sub-carnose, umbonate, umber, turning pale except in the centre, even, striate when moist, and slightly viscid. Stem nearly equal, somewhat silky, whitish; gills rather broad, of the

same colour as the pileus, distant, deeply decurrent, interstices venoso-rugose.—*Berk. Outl. p. 200. Ann. N.H. no. 701. Batsch. f. 215?*

In grassy pastures. Twycross.

Pileus 1-2 in. broad, at first sub-campanulate, at length expanded, strongly umbonate, reddish umber, paler when dry, except in the centre, when moist striate, and very obscurely viscid. Stem 1 in. or more high, 1-2 lines thick, brittle, fibrous, nearly equal, white, very slightly tinged with umber, somewhat silky; gills umber, but paler than the pileus, strongly decurrent, broad, distant, interstices strongly veined and rugose.—Spores $\cdot 00025 \times \cdot 0003$ in. long, obovate.

Sect. 3. Hygrocybe.

567. Hygrophorus lætus. *Fr.* "Shining Hygrophorus."

Pileus thin, convexo-plane, nearly even, viscid, somewhat shining, tawny; stem tough, equal, tawny; gills sub-decurrent, thin, distant, paler.—*Fr. Epicr. p. 330. Ann. N.H. no. 702.*

On open pastures.

Stem hollow, 2-3 in. long, slender, 2 lin. thick, equal, tough, even, quite smooth. Pileus about an inch broad, slightly fleshy, margin membranaceous, obtuse, even, or slightly striate at the margin. Spores $\cdot 0003$ in. long, nearly globose.

568. Hygrophorus ceraceus. *Fr.* "Wax-like Hygrophorus."

Brittle. Pileus thin, convexo-plane, obtuse, slightly striate, viscid, waxy, as well as the fistulose, unequal, shining stem; gills adnate, sub-decurrent, distant, yellow.—*Fr. Epicr. p. 330. Jacq. Coll. ii. t. 15, f. 2. Sow. t. 20. Eng. Fl. v. p. 40.*

In pastures. Common. [Cincinnati, United States.]

Pileus 1 in. broad, convexo-plane, occasionally sub-umbonate, viscid, sub-carnose, margin sub-striate; gills very broad ($\frac{3}{4}$ of an inch), ventricose, connected by veins. Stem 2-3½ in. long, 2 lines or more thick, flexuous, equal, or slightly unequal, sometimes compressed, yellow, occasionally orange at the base.—*M. J. B. Spores $\cdot 00026 \times \cdot 00018$ in.*

569. Hygrophorus coccineus. *Fr.* "Carmine Hygrophorus."

Fragile. Pileus thin, convex, obtuse, viscid, scarlet, growing pale, smooth; stem hollow, compressed, yellowish; gills adnate, with a decurrent tooth, connected by veins, variously shaded.—*Fr. Epicr. p. 330. Schæff. t. 302. Bull. t. 570, f. 2, S.Y.X. Huss. i. t. 61. Fl. Dan. t. 7, 5. Sow. t. 381 (partly). Batt. t. 19, B. Eng. Fl. v. p. 40. Price, f. 57. Vent. t. 52, f. 1-5.*

In open pastures. Sept. Oct. Common.

Pileus 1-2 in. broad, at first obtuse, conico-campanulate, at length inverted, sometimes strongly umbonate, splitting from the centre, yellow, orange or scarlet, viscid when moist, when dry pallid, appearing to the eye fibrillose, but not really so, margin thin, more or less wavy. Gills broad, ventricose, wrinkled, thick, connected by veins, retaining their colour longer than the pileus, adnate, with a decurrent tooth in depressed specimens. Stem $1\frac{1}{2}$ in. long, $\frac{1}{2}$ in. thick, more or less hollow, sub-flexuose, smooth, though apparently sub-fibrillose, tough, but easily splitting.—*M. J. B.* Spores $\cdot 00016 \times \cdot 00027$ in.

570. Hygrophorus miniatus. *Fr.* "Vermilion Hygrophorus."

Fragile. Pileus thin, convex, thin, umbilicate, vermilion, soon dry, changing colour, opaque, and squamulose; stem somewhat stuffed, equal, polished, scarlet; gills adnate, distant, yellow, or yellowish vermilion.—*Fr. Epicr. p. 330. Fl. Dan. t. 1009, f. 2. Krombh. t. 1, f. 29. Bull. t. 570, fig. 2 (smaller figs). Eng. Fl. v. p. 41.*

In moist places, on heaths, &c. July. Aug. Common.

Pileus $\frac{1}{2}$ -1 in. broad, obtuse, even, moist but not viscid, turning pale; gills not decurrent nor connected by veins, distant, broad, plane, yellow, with a tinge of scarlet, or dull yellow; stem 2 in. high, 1 line thick, brittle, even, shining, at length hollow at the apex.—*Fries.* Spores $\cdot 00023 \times \cdot 00034$ in.

571. Hygrophorus puniceus. *Fr.* "Blood-red Hygrophorus."

Fragile; pileus fleshy, thin, campanulate, obtuse, repand, even, viscid, blood-scarlet, then becoming pale; stem hollow, thick, ventricose, striate, white at the base; gills adnexed, thick, distant, yellow.—*Fr. Epicr. p. 331. Fl. Dan. t. 883, f. 1. Bull. t. 202. Bolt. t. 67, f. 2. Paul. t. 120, f. 1, 2, 6. Tourn. t. 327, f. A. B. Eng. Fl. v. p. 40.*

In meadows. July—Aug.

Pileus 2-4 in. broad, at first campanulate, then plano-convex, broadly and obtusely umbonate, even, undulated and lobed, irregular, when moist subviscid, blood-coloured, when dry the centre becoming pale; gills ventricose, 2-4 lines broad, at length connected by veins, altogether adnate, but, because of the form of the pileus, appearing free, yellow, varying to whitish-yellow, and purplish at the base; stem 3 in. long, $\frac{1}{2}$ -1 in. thick, attenuated at both ends, dry, striate, often squamulose at the apex, stuffed when young, then hollow, yellowish, or of the colour of the pileus.—*Fries.*

572. Hygrophorus obrusseus. *Fr.* "Golden Yellow Hygrophorus."

Fragile, bright golden yellow; pileus fleshy, thin, conico-convex, obtuse, flexuose, rather dry; stem hollow, sub-compressed, smooth, even; gills adnate, ventricose, thick, distant.—*Fr. Epicr. p. 331. Batt. t. 19, D. Bolt. t. 68. Ann. N.H. no. 798.*

In woods. Oct. Rare. Mossburnford.

Remarkable for its bright gold-coloured pileus, and adnate ventricose gills.
—*B. & Br.*

Pileus 2-3 in. broad, flexuous, sub-lobate; stem thick, ascending, compressed, 3 in. long, $\frac{1}{2}$ in. thick, or broader when compressed, sulphur-coloured, tawny at the base.

573. *Hygrophorus conicus.* Fr. "Conical Hygrophorus."

Fragile; pileus submembranaceous, conical, acute, smooth, somewhat lobed, at length expanded, and rimose; stem hollow, cylindrical, fibroso-striate; gills attenuated, free, ventricose, thin, rather crowded.—*Fr. Epicr. p.* 331. *Schæff. t.* 2. *Sow. t.* 381. *Batsch. f.* 28. *Bull. t.* 50, 524, *f.* 3. *Eng. Fl. v. p.* 40. *Smith. P.M. f.* 2.

In pastures. Common. [Low. and Mid. Carolina.]

Pileus 1-2 inches high, acutely conic, variously waved and lobed, fibrillose, viscid when moist or young, juicy, turning black, as does the whole plant when broken or bruised, orange, yellow, scarlet, brown, dusky, &c., various colours often blended together; gills thick, fleshy, ventricose, attenuated behind, free or adnexed, yellowish with frequently a cinereous tinge; stem 3-4 in. long, 2-4 lines thick, often splitting, fibrilloso-striate, coloured like the pileus.—*M. J. B.* Spores $\cdot 0004 \times \cdot 00025$ in. (*Fig.* 49.)

574. *Hygrophorus chlorophanus.* Fr. "Sulphury Hygrophorus."

Fragile; pileus submembranaceous, convex, obtuse, somewhat lobed, striate; stem hollow, equal, even, viscid; gills adnexed, ventricose, thin, rather distant, becoming whitish.—*Fr. Epicr. p.* 332. *B. & Br. Ann. N.H. no.* 933. *Krombh. t.* 3, *f.* 6, 7.

Amongst grass and moss. King's Cliffe.

Stem hollow, equal, rarely compressed, 2-3 in. long, 2-3 lin. thick, smooth, viscid when moist, shining when dry, yellow; pileus about 1 in., usually bright sulphur-yellow, sometimes red, viscid; gills emarginate, adnexed, with a small decurrent tooth.

575. *Hygrophorus psittacinus.* Fr. "Parrot Hygrophorus."

Pileus thin, campanulate, then expanded, umbonate, somewhat striate, clothed with green evanescent gluten, as well as the hollow, tough, even stem; gills adnate, ventricose, thick, distant, greenish.—*Fr. Epicr. p.* 332. *Schæff. t.* 301. *Grev. t.* 74. *Bull. t.* 545, *f.* 1. *Batt. t.* 21, *E. Sow. t.* 82. *Huss i. t.* 41. *Eng. Fl. v. p.* 39. *Gard. Chron.* 1860, *p.* 240. *Vent. t.* 42, *f.* 1-3.

In fields, &c. Common. [Mid. Carolina.]

Pileus 1 in. broad, conical, at length spreading, sometimes concave from the margin turning up, smooth, glutinous, green at first, partly changing to yellow of various intensity, often cracking; gills slightly adnate, bright

yellow, often shaded with green, sub-distant, thick, broad in the centre; stem 2-3 in. high, about 2 lines thick, hollow, splitting, green, yellow at the base, very slimy. — *Grev.* Spores 0002×00028 in.

576. *Hygrophorus calyptræformis.* B. & Br. "Hood-like *Hygrophorus.*"

Pileus thin, acutely conical, lobed below, minutely innato-fibrillose; stem white, smooth, slightly striate, hollow; gills rose-coloured, at length pallid, very narrow, acutely attenuated behind. — *Berk. Outl.* p. 202. *Mag. Zool. & Bot.* no. 63. *Trans. Woolh. Cl.* 1861, t. 21, f. 4-6.

On the borders of woods and open pastures. Oct.

Pileus acutely conic, lobed below, about 1 in. high, $\frac{3}{4}$ in. broad at the base, in unexpanded specimens moist, striate under a lens, with innate, but raised fibrillæ, rose-coloured, gradually turning pallid; flesh rather thin; gills rose-coloured, at length pallid like the pileus, very narrow, and often almost evanescent behind, though properly adnate, distinct; stem 1 in. or more high, pure white, except within the pileus, where it has a slight roseate tinge, brittle, often splitting longitudinally, remarkably smooth, slightly striate, hollow, the walls fibrous within; the young pileus has a great resemblance to the internal bractœa of an artichoke just before expansion. — *M. J. B.* Spores 0001×00015 in.

577. *Hygrophorus unguinosus.* Fr. "Dingy *Hygrophorus.*"

Fragile. Pileus thin, campanulate, then convex, obtuse, even, clothed with dingy gluten, as well as the hollow, unequal, sub-compressed stem; gills adnate, ventricose, plane, thick, white, becoming glaucous. — *Fr. Epicr.* p. 332. *Mag. Zool. & Bot.* no. 62.

In woods and pastures. Oct.

Stem hollow, 2 in. long, 3 lin. thick, commonly attenuated towards either end; pileus smooth or at length cracked, about 2 in. broad; gills thick, distant, connected by veins, broad. Inodorous.

578. *Hygrophorus murinaceus.* Fr. "Mouse-coloured *Hygrophorus.*"

Fragile, strong scented. Pileus thin, campanulate, then expanded, irregular, viscid, soon dry, rimuloso-squamulose; stem nearly hollow, unequal, sub-compressed, even; gills adnate, seceding, broad, distant, somewhat waved, white, then glaucous. — *Fr. Epicr.* p. 333. *Bull. t.* 520. *Sow. t.* 106. *Krombh. t.* 72. *Batt. t.* 19, f. A.

In pastures.

Stem twisted, equal but compressed, fragile, 2-3 in. long, 3-5 lin. thick, polished, whitish; pileus 2 in. broad, at first rather viscid, then squamulose, growing pale; gills broadly emarginate, very broad, connected by veins.

Gen. 8.

GOMPHIDIUS, Fr. *Epicr.* p. 319.

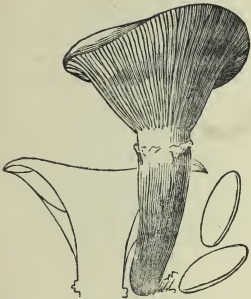


Fig. 50.

Spores large, greenish-grey, becoming black, fusiform (often spuriously uniseptate, according to Fries); veil universal, glutinous, terminated on the stem by a floccose annulus; pileus continuous with the stem, fleshy, convex, at length top-shaped; stem with a floccose annulus, confluent with the hymenophore; gills strongly decurrent, somewhat branched, soft, mucilaginous, often spreading in a continuous membrane.

HAB. Growing on the ground, chiefly in pine woods, solitary, sub-persistent. (Fig. 50.)

Principally distinguished by the mucilaginous nature of the gills. Nearly allied to *Cortinarius*, but at once distinguished by the nature and colour of the spores, and from all the dark purple and black-spored Agarics by the compact pileus, etc. Properties unknown; none edible.—*W. G. S.*

579. Gomphidius glutinosus. Fr. "Glutinous Gomphidius."

Pileus obtuse, glutinous, purplish-brown; gills whitish, then cinereous, shortly adnexed; trama none.—*Fr. Epicr.* p. 319. *Sow. t.* 7. *Fl. Dan. t.* 1247. *Schæff. t.* 36. *Letell. t.* 647. *Krombh. t.* 4, f. 3, 4, t. 62, f. 15-20. *Eng. Fl. v.* p. 124. *Corda. Sturm. t.* 51.

In fir woods.

Pileus 2-5 in. broad; gills truly branched; stem 2-3 in. high, or more, $\frac{1}{2}$ in. thick, dirty white, the base thickened and yellow, sometimes adorned with black scales.—*Fries.* Spores 0006×00025 in.

var. β. roseus. Smaller, base of stem and pileus rose-red.—*Krombh. t.* 63, f. 13-17. *Saund & Sm. t.* 8. *Eng. Fl. v.* p. 124.

Spores larger than the typical form. (Fig. 50, reduced.)

580. Gomphidius viscidus. Fr. "Viscid Gomphidius."

Pileus at length umbonate, viscid, brownish-red; gills purplish-umber, truly branched; trama similar to the pileus.—*Fr. Epicr.* p. 319. *Schæff. t.* 55. *Letell. t.* 603. *Krombh. t.* 4, f. 5-7. *Pers. Ic. & Desc. t.* 13, f. 1-3. *Sow. t.* 105. *Ag. rutilus, Eng. Fl. v.* p. 124.

Under Scotch firs. Aug.—Oct. [Low. Carolina.]

Pileus 2-3 in. broad, top-shaped, umbonate, yellow in the centre, the margin liver-coloured, shining; gills decurrent, somewhat branched, firm, elastic, thick, entire, purple-brown, the shorter connected with the longer; spores dark, fusiform. Stem 2-3 in. high, $\frac{1}{2}$ – $\frac{3}{4}$ in. thick, rhubarb-coloured without and within, fibrillose, attenuated below, firm, solid, slimy from the remains of the veil, which form an obsolete filamentous ring.—*M. J. B.* Spores $\cdot 00063 \times \cdot 00025$ in.

581. Gomphidius stillatus. *Strauss.* "Slender Gomphidius."

Pileus conico-hemispherical, clothed with dingy gluten, at length spotted with black; gills of a watery, dingy white, forked; stem slender, sprinkled with minute scales above, virgate below. *Str. Sturm. t. 2. G. gracilis, Berk. Outl. t. 12, f. 7. Ann. N.H. no. 698.*

In fir woods. Llanberris. Lea.

Pileus 1 in. across, conico-subhemispherical, of a pale vinous brown, when dry clothed with dirty fuliginous slime, which dries, especially round the margin, into black spots, or forms a narrow, irregular black border. Stem 2 in. high, $1\frac{1}{2}$ line thick, flexuous, pale, especially above, where it is sprinkled with minute white scales, virgate below, with the remains of the slime, yellow at the base; gills arched, decurrent, forked, thick, obtuse, clothed under a lens with short tomentose hairs, of a washy bistre. Spores oblong, elliptic, $\cdot 0009$ in. long, $\cdot 0003$ in. wide, with a nucleus at either end. Distinguished from every other species by its slender stem and delicate habit.—*M. J. B.*

Gen. 9. LACTARIUS, Fr. Epicr. p. 333.

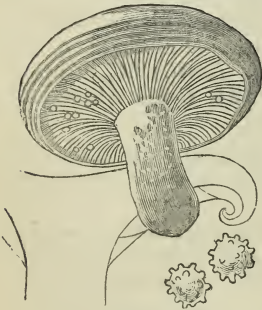


Fig. 51.

Spores white or very pale yellow, generally echinulate; veil none, but in some species the margin of pileus is bearded or pubescent; pileus fleshy, of a floccose or vesiculose (not fibrous) texture, at length depressed in the middle, margin at first involute; stem fleshy, not corticate, often hollow when old, confluent with the hymenophore; gills milky, in nearly all the species at first white, often changing to sulphur colour, red, or violet on exposure to the air, subdecurrent, unequal, with an acute edge; trama subvesiculose.

HAB. All grow on the ground. (Fig. 51.)

The species are easily recognised by the milky gills. The genus is nearly allied to *Russula*, but easily distinguished by its milky juice. They vary greatly in taste, being mild, aromatic, bitter, or acrid and burning. *Lactarius* therefore includes delicate and excessively poisonous species.

A. Piperites—milk at first white, acrid.

Sect. 1. Torminosi.

582. Lactarius torminosus. *Fr.* "Woolly Lactarius."

Pileus fleshy, depressed, subzonate, pallid; stem stuffed, soon hollow, equal (rarely spotted), pallid; margin involute, bearded; gills thin, whitish, milk persistently white, acrid.—*Fr. Epicr. p. 334. Schæff. t. 12. Fl. Dan. t. 1068. Fr. Fung. Esc. t. 38. Krombh. t. 13, f. 15-23. Bull. t. 529, f. 2. Smith. P.M. f. 11. Sow. t. 103. Eng. Fl. v. p. 24. Barla. t. 18, f. 7-10. Vent. t. 30, f. 2.*

In woods, fields, &c. June—Oct. Local. [S. Carolina.]

Pileus 2-5 in. broad, smooth, or nearly so, except the involute margin, which is most copiously shaggy, depressed, more or less zoned, of a beautiful ochre or strawberry colour, at first viscid, milk white, very acrid, not changeable; gills rather narrow, nearly of the same colour as the pileus, but yellower and paler, slightly forked; stem $1\frac{1}{2}$ -2 in. long, $\frac{1}{2}$ in. thick, sometimes shining, obtuse, paler than the pileus, at length hollow, clothed with minute adpressed down. Very acrid.—*M. J. B.* Spores echinulate, $\cdot 00035 \times \cdot 00025$ in.

583. Lactarius cilicioides. *Fr.* "Tomentose Lactarius."

Pileus fleshy, soft, depressed, tomentose, not zoned, turning pallid; margin fibrillose or woolly; stem stuffed, even, pruinose, silky, spotless, pallid; gills crowded, branched, white, then yellowish, as well as the milk.—*Fr. Epicr. p. 334. Schæff. t. 228. (Krombh. t. 40, f. 17-19?) Eng. Fl. v. p. 24.*

In pine woods. Rare.

Pileus 2-4 in. broad, depressed, margin rounded, involute, reddish-buff, sometimes glutinous, very downy, becoming fibrillose at the margin; gills yellowish, irregular and often branching, apparently decurrent from the expansion of the stripes into the substance of the pileus. Flesh yellowish white, darker towards the surface. Stem about 2 in. high, nearly 1 in. thick, dingy white, yellow or brown. There is no juice, but a considerable moisture on the surface of the pileus, which seems to originate from the plant.—*Grev.*

584. Lactarius turpis. *Fr.* "Dirty Lactarius."

Pileus compact, plane, olivaceous-umber, zoneless; margin at first yellowish-downy; stem stuffed, short, viscid, attenuated downwards, olivaceous; gills thin, pallid; milk white, acrid.—*Fr. Epicr. p. 335. Fl. Dan. t. 1913. Krombh. t. 69, f. 1-6. Ann. N. H. no. 703.*

In fir woods. Coed Coch. East Bergholt. [Mid. Carolina.]

Growing to a large size, and remarkable for its yellow, olive, or umber hue. Stem $1\frac{1}{2}$ -3 in. long, $\frac{1}{2}$ -1 in. and more thick, viscid or dry, not spotted, pale or dark olive, apex becoming ochraceous. Pileus fleshy, rigid, olive, verging on umber; margin at first involute and villous, with a yellowish olive down, then more or less expanded, at length closely sulcate.

585. *Lactarius controversus*. Pers. "Stained Lactarius."

Pileus compact, rather fragile, umbilicate, infundibuliform, floccose, then smooth, viscid, variegated with blood-red spots; margin at first involute, villous; stem solid, blunt, unequal; gills thin, much crowded, simple, flesh-coloured; milk white, acrid.—*Fr. Epicr. p.* 335. *Vitt. Mang. t.* 27. *Fr. Fung. Esc. t.* 39. *Trans. Woolhope Club*, 1868, *p.* 245, *plate.* *Bull. t.* 538. *Batsch. f.* 201. *Paul. t.* 68, *f.* 1. *Vent. t.* 51. *Barla. t.* 18, *f.* 1, 2?

Under poplars. Abergavenny. Breinton, etc.

Stem stout, swollen, 1-2 in. long, sometimes excentric, pruinose at the top, never marked with pits or depressions; gills decurrent, with an obscure tooth; pileus fleshy, compact, rigid, convex, then depressed and subinfundibuliform; at first dry, but after rain viscid in all its parts; margin at first involute and villous; stem and pileus more or less covered with blood-red spots and smears; flesh very firm, like *L. piperatus*. *Fr.* Milk very acrid, white, plentiful; odour faint, but pleasant; taste exceedingly acrid. "Feels and looks soapy." Spores echinulate, 0003×00025 in.—*W. G. S.*

586. *Lactarius pubescens*. Schrad. "Pubescent Lactarius."

Pileus fleshy, firm, plano-umbilicate, whitish, disc glabrous, shining; margin whitish-fibrillose (or tomentose); stem stuffed, then hollow, very short, attenuated downwards; gills somewhat crowded, flesh-coloured; milk acrid, white.—*Schrad. Spic. p.* 122.

var. margine-tomentoso. B. & Br. Ann. N.H. 1865, *no.* 1015. *Krombh. t.* 13, *f.* 1-12.

In pastures. Aug. Aboyne.

Pileus 2 in. across, depressed, clothed with fine matted down; margin involute, tomentose; flesh firm; stem nearly equal, $1\frac{1}{2}$ in. high, about 5 lines thick, smooth, pale flesh-coloured; gills thin, scarcely branched; milk extremely acrid, white, not changeable; odour pungent.—*B. & Br.*

Sect. 2. Limacini.

587. *Lactarius insulsus*. Fr. "Unsavoury Lactarius."

Pileus fleshy, umbilicate, then infundibuliform, viscid, somewhat zoned, yellowish, margin naked; stem stuffed, then hollow, firm, pallid; gills crowded, forked, pallid; milk white, acrid.—*Fr. Epicr. p.* 336. *Krombh. t.* 12, *f.* 1-6. *Huss. i. t.* 59. *Berk. Outl. t.* 13, *f.* 2. *Gard. Chron.* 1860, *p.* 752.

In woods and on their borders. Common. [Mid. Carolina.]

Stem $1\frac{1}{2}$ in. long, 1 in. thick, rarely protracted to 3 in. and then equal. Pileus 3-4 in. broad, zoned, chiefly about the margin, smooth, yellowish brick red, viscid, cuticle slightly separating, margin naked. Flesh firm, pallid; gills decurrent, forked at the base, whitish, becoming pallid.

588. Lactarius zonarius. Fr. "Zoned Lactarius."

Pileus compact, umbilicate, even, viscid, with yellowish zones; margin involute, naked; stem solid, short, elastic, even, yellowish; gills crowded, thin, whitish; milk white, acrid, unchangeable.—Fr. *Epicr.* p. 336. *Bull.* t. 104. *Vaill.* t. 12, f. 7. *Eng. Fl.* v. p. 25. *Vent.* t. 34, f. 4-5.

On the borders of woods. Aug.—Oct. Rare.

[Cincinnati, U.S.]

Pileus 2-3 in. broad, nearly plane, rufescent from cinereous with brown zones, milk at first white. Stem $1\frac{1}{2}$ in. high, pale.—Fries. Spores minutely echinulate, almost globular, diameter .00027 in.

(Fig. 51, reduced.)

589. Lactarius blennius. Fr. "Slimy Lactarius."

Pileus fleshy, depressed, glutinous, often concentrically guttate, greenish-grey; margin from the first slightly pubescent; stem stuffed, then hollow, viscid, of the same colour; gills crowded, white, as well as the acrid milk.—Fr. *Epicr.* p. 337. *Kromb.* t. 69, f. 7-9. *Krapf.* t. 4, f. 11, 13. *Sterb.* t. 5, *E. Fl. Dan.* t. 1961, f. 1. *Eng. Fl.* v. p. 26. *Berk. exs.* no. 3.

In woods. Common.

Pileus 2-4 in. broad, fleshy, rarely subzonate, convex, the margin generally involute and adpresso-tomentose, at length more or less depressed, dull cinereous green, at first viscid; more or less pitted. Milk white, not changeable; gills rather narrow, pale ochraceous, scarcely forked, not connected by veins. Stem 1 in. long, $\frac{1}{4}$ - $\frac{1}{2}$ in. thick, paler than the pileus, attenuated downwards, obtuse, smooth, at length hollow, sometimes pitted; very acrid.—M. J. B. Spores sparingly echinulate, .0002 \times .0003 in.

590. Lactarius hyginus. Fr. "Reddish viscid Lactarius."

Pileus fleshy, rigid, umbilicate, even, viscid, fleshy-red, growing pale; margin thin, inflexed; stem stuffed, then hollow, smooth, rather spotted; gills crowded, white, as well as the acrid milk.—Fr. *Epicr.* p. 337. *Krombh.* t. 14, f. 15, 16. *Eng. Fl.* v. p. 26.

In woods. Aug.—Oct.

Pileus 4-5 in. broad, pinky or brownish-white, viscid; gills white, yellowish with age; stem 3-4 in. high, $\frac{1}{2}$ in. thick, solid (then hollow), white, with a pinky tinge; juice dilutely milky, very acrid.—With.

591. Lactarius trivialis. *Fr.* "Large lurid Lactarius."

Pileus fleshy, depressed, viscid, zoneless, lurid, becoming pale, cuticle inflexed at the margin; stem hollow, stout; gills thin, crowded, white, as well as the acrid milk.—*Fr. Epicr. p.* 337. *Krombh. t.* 14, *f.* 17-18. *Ann. N.H. no.* 934.

In pine woods. Sept.

Stem 1-6 in. long, 1 in. or more thick, paler than the pileus, smooth, unspotted. Pileus 4-7 in. broad, depressed, at length funnel-shaped. Margin at first involute, then expanded, dark lurid, becoming pale, or flesh-coloured tan. Flesh white. Gills sub-decurrent, 2-4 lin. broad, rather thin, whitish becoming pallid.

592. Lactarius circellatus. *Fr.* "Dingy-zoned Lactarius."

Pileus fleshy, convex, then plane, repand, viscid, zoned with ferruginous, disc from the first umbilicate, darker; stem solid, firm, attenuated downwards; gills crowded, whitish; milk white, acrid.—*Fr. Epicr. p.* 338. *Batt. t.* 13, *D. Sow. t.* 203.

In woods. Rare.

Stem 1½-2 in. long, ½ in. and more thick, even, smooth, growing pale. Pileus depressed-convex, then expanded and depressed in the centre, 2-3 in. broad, when young and moist viscid, rufous-brown, variegated with darker zones. Gills horizontal, with a subdecurrent tooth, very thin and crowded, narrow.

593. Lactarius uvidus. *Fr.* "Moist Lactarius."

Pileus fleshy, thin, convex, then depressed, zoneless, viscid, dingy; margin at first involute, naked; stem soon hollow, viscid, pallid; gills thin, crowded, white, when wounded becoming lilac; milk white, then lilac.—*Fr. Epicr. p.* 338. *Batsch. f.* 202. *Eng. Fl. v. p.* 25. *Krombh. t.* 57, *f.* 14-16.

In woods. July—Sept.

Pileus 2-2½ in. broad, fleshy, depressed, sometimes obsoletely zoned, viscid, pale, dirty rufescent, or cinereous with a shade of lilac, speckled with small watery spots, which originate beneath the epidermis; gills paler, adnato-decurrent, the shorter ones very obtuse, and truncate behind, connected by veins; milk white, acrid; stem 2 in. high, ½ in. thick, spongy, at length hollow, marked with little longitudinal pits, strigose at the base, the whole plant white when cut, turning to a beautiful lilac.—*M. J. B.*

Sect. 3. Piperati—pileus dry.

594. Lactarius pyrogalus. *Fr.* "Pear-scented Lactarius."

Pileus fleshy, plane, then depressed, subzonate, smooth, even, rather moist, livid, cinereous; stem stuffed, then hollow, pallid, attenuated downwards; gills thin, rather distant, yellowish;

milk very acrid, copious, white.—*Fr. Epicr. p. 339. Bull. t. 529, f. 1. Krombh. t. 14, f. 1-9. Paul t. 72, f. 1-2? Larbr. t. 18, f. 3. Eng. Fl. v. p. 29. Smith. P.M. f. 18. Ann. N.H. no. 798*.*

In woods and meadows. Aug.

Pileus 2-3 in. broad, firm, at length dirty yellowish, in shady places almost zoneless. Milk abundant, extremely acrid. Stem $1\frac{1}{2}$ in. long, 3-5 lines thick, stuffed, soon hollow, often attenuated, smooth or scrobiculate.—*Fries.* Spores sparingly echinulate, white, or with a suggestion of ochre, almost globular, '00026 in. diameter.—*W. G. S.*

595. *Lactarius plumbeus.* Fr. "Lead-coloured Lactarius."

Pileus compact, convex, at length infundibuliform, dry, unpolished, dingy, then blackish brown; stem solid, equal, blunt; gills crowded, white then yellowish; milk acrid, white, unchangeable.—*Fr. Epicr. p. 339. Bull. t. 282, 559, f. 2. Krapf. t. 4, f. 1-3. Sow. t. 245. Eng. Fl. v. p. 29. Barla. t. 21, f. 1-5.*

In woods. Rare.

Pileus 3-5 in. broad, large, convex, becoming depressed, firm, never zoned or glutinous; margin mostly involute, dark, fuliginous-grey or brown; flesh compact, white; gills numerous, yellowish, varying with different shades; stem 2-3 in. high, firm, thick, brownish, or dingy-olive.—*Grev.*

596. *Lactarius acris.* Fr. "Acrid Lactarius."

Pileus fleshy, irregular, at length infundibuliform, viscid, dusky cinereous; stem stuffed, then hollow, somewhat excentric, pallid, attenuated downwards; gills rather crowded, pallid, yellow, turning red; milk acrid, white, then reddish.—*Fr. Epicr. p. 342. Bolt. t. 60. Batsch. f. 68. Batt. t. 13, E. Eng. Fl. v. p. 25. Smith. P.M. f. 28.*

In woods. Aug.—Nov. Rare.

[S. Carolina.]

Gills distant; pileus almost black, extremely acrid and bitter.—*W. G. S.*

Pileus almost always excentric, emarginate, unequal, livid brown; gills rather distant; stem attenuated downwards, short, pallid; milk extremely acrid, dirty white, then rose-coloured, then yellowish, seldom unchangeable.—*Fries.* Spores echinulate, yellow, '00026 \times '00034 in.

597. *Lactarius chrysorrhæus.* Fr. "Yellow-juiced Lactarius."

Pileus rather fleshy, umbilicate, then infundibuliform, yellowish flesh-coloured, marked with darker zones or spots; stem stuffed, then hollow, equal, even, white; gills decurrent, thin, crowded, yellowish; milk white, then golden yellow, very acrid.—*Fr. Epicr. p. 342. Price, f. 71. Bolt. t. 144. Krombh. t. 12, f. 7-14. Ann. N.H. no. 705. A. theiogalus, Eng. Fl. v. p. 28.*

In woods. Common.

[United States.]

Pileus 1-3 in. broad, buff, sometimes slightly tinged with tawny, at first hemispherical, dimpled, at length depressed, more or less zoned; margin wavy, involute, and minutely downy when young; flesh firm, crisp; gills very slightly decurrent, connected by veins, distant, by no means rigid, salmon-coloured, slightly forked, about as broad as the flesh of the pileus; milk white, rather acrid, with a peculiar taste, changing instantly on exposure to a delicate but beautiful yellow; stem $1\frac{1}{2}$ in. high, $\frac{1}{2}$ -1 in. thick, at first nearly white obese, paler than the pileus, downy at the base, more or less hollow.—*M. J. B.*

598. *Lactarius piperatus.* Fr. "Peppery Lactarius."

White. Pileus compact, umbilicate, then infundibuliform, rather regular, not zoned, even, smooth; stem solid, thick, very short, white; gills decurrent, arcuate, crowded, narrow, dichotomous, white; milk copious, acrid, white.—*Fr. Epicr. p.* 340. *Fl. Dan. t.* 1132. *Krombh. t.* 56, *f.* 1-4. *Bull. t.* 200. *Paul. t.* 68, *f.* 3-4. *Smith. P.M. f.* 15. *Eng. Fl. v. p.* 30. *Barla. t.* 22, *f.* 1-5. *Berk. exs. no.* 61.

In woods. July—Sept. Common. Poisonous. [United States.]

Pileus 3-7 in. broad, slightly rugulose, quite smooth, white, a little clouded with yellow or stained with umber where scratched or bruised, convex, more or less depressed, often quite infundibuliform, more or less waved, fleshy, thick, firm but brittle; margin involute at first, sometimes excentric; milk white, hot; gills generally very narrow, $\frac{1}{20}$ in. broad, but sometimes much broader, cream-coloured, repeatedly dichotomous, very close "like the teeth of an ivory comb," decurrent from the shape of the pileus, when bruised changing to umber; stem 1-3 in. high, $1\frac{1}{2}$ -2 in. thick, often compressed, minutely pruinose, solid but spongy within, the substance breaking up into transverse cavities.—*M. J. B.* Spores not echinulate, generally with an apiculus, 0002×00024 in.

599. *Lactarius vellereus.* Fr. "Woolly-white Lactarius."

White. Pileus compact, umbilicate or convex, tomentose, zoneless; margin reflexed; stem solid, blunt, pubescent; gills distant, arcuate, whitish; milk scanty, acrid, white.—*Fr. Epicr. p.* 340. *Krombh. t.* 57, *f.* 10-13. *Sow. t.* 204. *Bull. t.* 538, *f.* G.H.N. *Schæff. t.* 225. *Eng. Fl. v. p.* 31. *Barla. t.* 22, *f.* 6-8. *Berk. exs. no.* 122.

In woods. Common.

[Cincinnati, United States.]

Pileus 4-7 in. broad, more or less infundibuliform, the whole surface minutely but densely tomentose, white, firm, fleshy; margin at first involute; milk white, acrid; gills white, narrow (occasionally broad and brittle), distant forked, connected by veins, at length slightly buff or yellowish, rufescent after being bruised; stem 1 in. high, 2 in. thick, blunt, rather less downy than the pileus, solid.—*M. J. B.* Spores hardly echinulate, 00019×00034 in.

var. exsuccus Otto. is a very different looking plant from *L. vellereus*, *Fr.*; it is destitute of milk, and is like a *Tricholoma* or

Clitocybe, not rigid as in *L. vellereus*, Fr. The gills are pale lemon colour with a shade of green; stem short; spores covered with spines almost globular, .00035 in. diameter.—*W. G. S.*

B. *Dapetes*—Stem central; gills naked and milk aromatic, at first acrid, then mild; gills becoming pallid.

600. *Lactarius deliciosus*. Fr. "Delicious Lactarius."

Pileus fleshy, umbilicate, viscid, zoned, smooth, rufous-orange, growing pale; margin smooth; stem stuffed, then hollow, rather spotted; gills and milk at first saffron-red, then greenish.—Fr. *Épicr.* p. 341. *Fl. Dan.* t. 1151. *Schæff.* t. 11. *Krombh.* t. 11. *Lenz.* f. 9. *Letell.* t. 633. *Vitt. Mang.* t. 42. *Cooke B.F.* t. 13. *Sow.* t. 202. *Huss.* i. t. 67. *Smith E.M.* f. 11. *Eng. Fl.* v. p. 26. *Vent.* t. 29, f. 3-4, t. 30, f. 1. *Hogg & Johnst.* t. 5. *Trans. Woolh.* Cl. 1867, t. 11. *Badh.* i. t. 6, f. 2-ii. t. 5, f. 4. *Barla.* t. 19.

In fir woods. Sept. Oct. Esculent. [United States.]

Gregarious, sometimes subcæspitose. Pileus 4 in. or more broad, zoned, orange rufous, dull, as if there were the remains of a minute, very closely pressed, dirty white web; hemispherical when young, in which state the margin is decidedly involute and tomentose, at length expanded, depressed, fleshy. The whole plant abounding with orange milk, and when bruised or old, stained with green; gills decurrent, from the first of the same colour as the pileus, forked at the base, rather broad and distant; stem 3 in. high, curved, stuffed, more or less hollow, scrobiculate, strigose at the base. Odour and taste agreeable, but slightly acrid.—*M. J. B.* Spores echinulate, almost round, .00025 in. diameter.

C *Russulares*—Gills discoloured, milk at first white.

Sect. 1. Pileus at first viscid.

601. *Lactarius pallidus*. Fr. "Pallid Lactarius."

Pileus fleshy, obtuse, depressed, smooth, viscid, zoneless, pallid; stem stuffed, then hollow, pruinose, white, then pallid; milk sweet, white.—Fr. *Épicr.* p. 343. *Krombh.* t. 56, f. 10-14. *Paul.* t. 80? *Ann. N.H.* no. 705. *Saund. & Sm.* t. 16.

In woods. Bowood.

[Mid. Carolina.]

Stem 2 in. and more long, $\frac{3}{4}$ in. thick, even, smooth. Pileus 3-6 in. broad, pallid, pinkish, pale clay-coloured, or tan-coloured. Margin broadly, and for a long time involute. Flesh pallid. Gills subdecurrent, arcuate, broad ($1\frac{1}{2}$ -2 lin.), rather thin, crowded, somewhat branched, whitish, at length of the colour of the pileus. Spores echinulate, almost round, diameter .0003 in.

602. Lactarius quietus. *Fr.* "Mild reddish Lactarius."

Pileus fleshy, depressed, obtuse, viscid at first, soon dry, growing pale, somewhat zoned, opaque, rufescent; stem stuffed, smooth, of the same colour; gills white, then reddish; milk mild, white.—*Fr. Epicr. p.* 343. *Kromb. t.* 40, *f.* 1-9. *Eng. Fl. v. p.* 27.

In woods. Sept.—Nov.

Pileus 2 in. or more broad, opaque, rufescent, often slightly zoned, at first deep liver-coloured, obtuse, at length depressed, smooth; the margin incurved, and delicately downy; flesh firm, thick; milk white, but sometimes of a decided pale yellow; gills pale rufescent, gradually becoming darker, decurrent, forked at the base, rather numerous, and narrow; stem 2 in. long, $\frac{1}{4}$ - $\frac{1}{2}$ in. thick, thickest upwards, of the same texture and colour as the pileus; flesh firm, bearing a strong pressure without breaking, when old less firm, but not hollow. Mild; odour oily and somewhat like that of bugs.—*M. J. B.* Spores papillose, 00034×00024 in.

603. Lactarius theiogalus. *Fr.* "Sulphur-juiced Lactarius."

Pileus fleshy, convex, then depressed, viscid, smooth, reddish-tawny; stem stuffed, even, of the same colour; gills thin, crowded, reddish-yellow; milk white, then sulphur-coloured, at length acrid.—*Fr. Epicr. p.* 342. *Bull. t.* 567, *f.* 2. *Krombh. t.* 2, *f.* 23, 24. *Bolt. t.* 9. *Paul. t.* 71. *Ann. N. H. no.* 704. *Barla. t.* 20, *f.* 14-16. *Smith. P. M. f.* 20.

In woods.

[United States.]

Stem 1-2 in. long, 2-4 lin. thick, even, of the same colour as the pileus. Pileus $1\frac{1}{2}$ -2 $\frac{1}{2}$ in. broad. Margin more or less thin, viscid, shining when dry, reddish-tawny. Gills adnato-decurrent, about 1 lin. broad, thin, crowded. The milk does not assume so bright a yellow tint as in *L. chrysorrheus*.

604. Lactarius cyathula. *Fr.* "Cup-like Lactarius."

Pileus fleshy, convexo-plane, umbonate, at length depressed, zoned, viscid, flesh-coloured, when dry rivulose, pallid, opaque; stem stuffed, equal, pallid; gills linear, narrow, crowded, white, then yellowish-flesh colour; milk acrid, white, unchangeable.—*Syst. Myc. p.* 66. *B. & Br. Ann. N. Hist.* 1865, *no.* 1016. *Krapf. t.* 8, *f.* 8, 9.

In woods. Aug. Aboyne.

Pileus plane, at length depressed or infundibuliform, $1\frac{1}{2}$ -2 in. across, opaque, slightly viscid, obtuse or obscurely umbonate, somewhat zoned, of a pallid flesh colour; stem spongy, stuffed, $1\frac{1}{2}$ -2 in. high, $\frac{1}{2}$ in. thick, nearly equal, at length compressed, shining, with a silky aspect; gills narrow, crowded, of a yellowish-flesh colour, sub-decurrent; milk white, not changeable, at length acrid; smell somewhat like that of bugs.—*B. & Br.*

Sect. 2. Pileus dry.

605. Lactarius rufus. Fr. "Red Lactarius."

Pileus fleshy, umbonate, at length infundibuliform, dry, flocculose, then becoming smooth, shining, zoneless, dark-rufous; stem stuffed, rufescent; gills crowded, ochraceous then rufous, milk white, very acrid.—Fr. *Epicr.* p. 347. Lenz. f. 11. Krombh. t. 39, f. 12-15. Paul. t. 69, bis. Huss. i. t. 15. Eng. Fl. v. p. 28. Smith. P.M. f. 12.

In fir woods. Sept.

Pileus 3 in. broad, plano-convex, slightly or strongly umbonate, with a depression round the umbo as the plant advances, deep rufescent, adpressotomentose, the margin slightly turned in and sub-striate, fleshy, firm, not very brittle nor zoned; milk white, insupportably acrid, not changeable; gills at first pale, then slightly rufescent, decurrent, here and there forked. Stem $2\frac{1}{2}$ in. high, $\frac{1}{2}$ in. thick, nearly equal, obtuse, firm, bearing a strong pressure, rufescent, but hoary or mealy, turning brown when bruised, somewhat stuffed, at length partly hollow, base downy.—M. J. B. Spores scarcely echinulate, almost round, diameter .00024 in.

606. Lactarius glyciosmus. Fr. "Scented Lactarius."

Pileus fleshy, thin, convexo-plane, somewhat umbonate, dry, squamulose, lurid, opaque; stem stuffed, thin, pubescent, pallid; gills crowded, yellowish-ochre; milk acrid, white.—Fr. *Epicr.* p. 348. Eng. Fl. v. p. 29. Krombh. t. 39, f. 16-18.

In fir woods. Sept. Oct.

Pileus 1-3 in. broad, more or less plane, often umbonate, various in colour, lurid-brown, brick-red, flesh-colour, or rufous, known by its peculiar scent, brittle. Gills narrow, opaque, pale when young; milk white, at length acrid. Stem $1\frac{1}{2}$ in. long, 3-4 lines broad.—Eng. Fl.

607. Lactarius serifulus. Fr. "Thin-juiced Lactarius."

Pileus fleshy, plane, then depressed, sub-flexuose, dry, smooth, zoneless, brownish-tawny; margin inflexed; stem solid, equal, rather incurved, paler, turning yellowish, as well as the crowded gills; milk sparing, colour of serum.—Fr. *Epicr.* p. 345. Krombh. t. 40, f. 15, 16. Berk. Outl. t. 13, f. 4.

In woods. Common.

Milk of a watery white.

Sect. 3. Pileus at first velvety.

608. Lactarius fuliginosus. Fr. "Dingy Lactarius."

Pileus fleshy, soft, depressed, obtuse, very dry, zoneless, at first clouded with a dingy bloom, then naked, cinereous tan-coloured;

stem stuffed, spongy, of the same colour; gills crowded, tan-coloured, flesh and milk acrid, white, then saffron coloured.—*Fr. Epicr. p.* 348. *Krombh. t.* 14, *f.* 10-12. *Bull. t.* 567, *f.* 3. *Eng. Fl. v. p.* 29. *Barla. t.* 21, *f.* 6, 7.

In woods. Aug.—Nov. Common. [Low. Carolina.]

Pileus 1-3 in. broad, not viscid, minutely pitted, plane, slightly depressed, of a dull grey buff, or umber, with a minute bloom; not zoned; margin not the least involute; flesh when cut soon changing to salmon colour; milk white, not changeable; gills slightly forked at the base, not connected by veins, ochraceous, sub-decurrent, mealy with the yellow spores, which are round and echinulate; stem $1\frac{1}{2}$ -3 in. long, 4-5 lines thick, solid, but the inner substance less dense, obese, much paler than the pileus, with a minute bloom. The colour of the pileus is exactly that of coffee and milk.—*M. J. B.* Spores yellow, echinulate, almost globular, diameter .00028 in.

Sect. 4. Pileus smooth, polished.

609. *Lactarius volemus.* *Fr.* “Orange-brown *Lactarius.*”

Pileus compact, rigid, plane, then depressed, obtuse, dry, golden tawny, at length rimoso-rivulose; stem solid, hard, blunt, pruinose; gills crowded, white, then yellowish; milk copious, sweet, white.—*Fr. Epicr. p.* 344. *Letell. t.* 624. *Lenz. t.* 3, *f.* 12. *Huss. i. t.* 87. *Eng. Fl. v. p.* 27. *Krombh. t.* 39, *f.* 1-4. *Barla. t.* 20, *f.* 1-3. *Smith. E.M. f.* 26.

In woods. King's Cliffe. Esculent. [S. Carolina.]

Pileus 4 in. broad, flesh thickish, moderately firm, obtuse, minutely umbonate, though the umbo at length vanishes, subdepressed, sometimes very faintly zoned, with a few minute wrinkles towards the margin, dry, at length cracked, of a rich orange brown, darker in the centre, the whole rather dull than shining; margin not the least involute, though when young the edge of the pileus is regularly incurved; milk white, abundant, quite mild; gills pale ochraceous, becoming fuscous on being touched, not very close, scarcely decurrent, even in depressed specimens, sometimes slightly forked; stem $2\frac{1}{2}$ - $3\frac{1}{2}$ in. high, above 1 in. thick, obese, minutely attenuated downwards, sculptured longitudinally, paler than the centre of the pileus, spongy in the centre, outer flesh reddish.—*M. J. B.*

610. *Lactarius mitissimus.* *Fr.* “Mild *Lactarius.*”

Pileus fleshy, thin, convex, then depressed, papillate, dry, zoneless, even, orange; stem stuffed, then hollow, smooth, of the same colour; gills crowded, paler; milk white.—*Fr. Epicr. p.* 345. *Krombh. t.* 39, *f.* 19, 20. *Ann. N.H. no.* 799.

In woods and hedgebanks.

Stem 1-3 in. long, $\frac{1}{2}$ - $\frac{1}{2}$ lin. thick, even, smooth. Pileus thin, rather rigid, depressed, with evanescent papillæ, 1-3 in. broad, brightly coloured. Flesh pallid; gills adnato-decurrent, at first somewhat arcuate, then straight, thin, crowded, 1- $1\frac{1}{2}$ lin. or more broad.

611. *Lactarius subdulcis.* Fr. "Sweet Lactarius."

Pileus fleshy, thin, papillate, at length depressed, polished, even, zoneless, rufous-cinnamon; stem stuffed, then hollow, equal, somewhat pruinose, becoming rufous, as well as the crowded, fragile gills; milk rather mild, white.—*Fr. Epicr. p.* 346. *Bull. t.* 222, *A.B.* *Sow. t.* 204. *Krombh. t.* 40, *f.* 13, 14. *Lenz. f.* 11. *Bolt. t.* 3. *Schæff. t.* 73, partly. *Eng. Fl. v. p.* 28. *Barla. t.* 20, *f.* 4-10.

In woods. Sept. Oct. Common. [S. Carolina.]

Pileus 1-4 in. broad, dark chocolate, sometimes slightly viscid when young; milk white, acrid when the plant is old; gills at length deep brown, scarcely at all forked; stem 1-2 in. high, $\frac{1}{4}$ - $\frac{1}{2}$ in. thick, substance looser than in *L. quietus*, at length hollow.—*M. J. B.* Spores between papillose and echinulate, diameter .00028 in.

612. *Lactarius camphoratus.* Fr. "Camphory Lactarius."

Pileus fleshy, thin, depressed, dry, somewhat zoned, smooth, brownish-red; stem stuffed, sub-undulate, of the same colour; gills crowded, yellowish-red; milk mild, white.—*Fr. Epicr. p.* 346. *Bull. t.* 567, *f.* 1. *Krombh. t.* 39, *f.* 21-24. *Ann. N.H. no.* 706.

In woods. [Low. Carolina.]

Known by its powerful smell of melilot, which it retains for a long time in the herbarium. Pileus $1\frac{1}{2}$ in. across.—*M. J. B.*

Gen. 10. *RUSSULA*, Fr. Gen. Hymen.

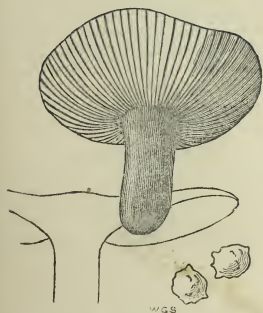


Fig. 52.

Spores white or very pale yellow, generally echinulate; veil entirely obsolete; pileus fleshy, convex, then expanded, and at length depressed; stem stout, polished, not corticate, generally spongy within, confluent with the hymenophore; gills nearly equal, milkless, rigid, brittle, with an acute edge, sometimes dropping water; trama vesiculose.

HAB. On the ground in late summer and autumn. (Fig. 52.)

This genus agrees with *Lactarius* in size, and some other characters, but differs in the absence of milk, and the gills being nearly equal. Odour none, or unpleasant. A few species are edible, but most are noxious.—*W. G. S.*

Sect. 1. *Compactæ*.**613. *Russula nigricans.* Fr. "Blackish Russula."**

Pileus equally fleshy, compact, umbilicate, depressed, dingy-olive; margin inflexed, without striæ; stem solid, blunt, at length charry-black; gills rounded thick, distant, unequal.—*Fr. Epicr.* p. 350. *Bull. t.* 579, *f.* 2. *Krombh. t.* 70, *f.* 14, 15. *Sow. t.* 36. *Huss. t.* 73. *Ann. N.H. no.* 799*. *A. adustus, Eng. Fl. v.* p. 23.

In woods. Common.

Pileus $2\frac{1}{2}$ - $3\frac{1}{2}$ in. broad, white, smooth, or clothed with a very minute pubescence or meal, which when touched turns black, plano-depressed, at length infundibuliform, flesh thick, firm, crisp, turning red when cut, when old the whole plant is black. Margin not involute; gills narrow, pale yellowish, thick, distant, forked, decurrent; stem 3 in. high, nearly 1 in. thick, subincrassated below, very obtuse, substance and surface like that of the pileus.—*M. J. B.* Known from its coarse habit, and becoming red when bruised. Spores papillose, diameter .0003 in.

614. *Russula adusta.* Fr. "Scorched Russula."

Pileus equally fleshy, compact, depressed, nearly infundibuliform; margin at first inflexed and smooth, then erect and without striæ; stem solid, blunt, dingy-cinereous; gills adnate, then decurrent, thin, crowded, unequal.—*Fr. Epicr.* p. 350. *Krombh. t.* 70, *f.* 7-11. *Batt. t.* 13, *C. Barla. t.* 17. *Ann. N.H. no.* 800.

In woods. Sept. Oct.

[United States.]

Commonly smaller than *R. nigricans*, pileus at length infundibuliform; gills decurrent, thin, crowded; colour when young pallid or whitish, when old as if scorched, sooty-grey.—*Fries.* Well distinguished by its comparatively thin, crowded gills, and other points.—*B. & Br.*

615. *Russula delica.* Fr. "Whitish Russula."

Pileus equally fleshy, firm, umbilicate, even, shining; margin involute, smooth, without striæ; stem solid, compact, white; gills decurrent, thin, distant, white.—*Fr. Epicr.* p. 350. *Batt. t.* 17, *A. Paul. t.* 73, *f.* 1. *Krombh. t.* 70, *f.* 12, 13. *Vent. t.* 48, *f.* 3, 4.

In woods.

Stem solid, short, 1-2 in., $\frac{1}{2}$ in. and more thick, even, smooth, white. Pileus everywhere fleshy, 3-5 in. broad, firm, umbilicate, then infundibuliform, regular, even, smooth; margin involute, without striæ. Flesh firm, dry, white.

Sect. 2. *Furcatae*.**616. *Russula furcata*. Fr. "Forked Russula."**

Mild, at length bitter. Pileus fleshy, rigid, plane, then depressed and infundibuliform, even, somewhat shining, with a silky lustre, at length smooth; margin even, acute; stem stout, firm, even, attenuated downwards; gills adnato-decurrent, rather thick, somewhat distant, forked, white, as well as the stem.—*Fr. Epicr. p.* 352. *Krombh. t.* 62, *f.* 1, 2, *t.* 69, *f.* 18-22. *Bull. t.* 26. *Schæff. t.* 94, *f.* 1. *Paul. t.* 74, *f.* 1. *Buxb. v. t.* 47, *f.* 2. *Eng. Fl. v. p.* 22. *Barla. t.* 16, *f.* 1-9.

In woods. Sept. Common.

[United States.]

Stem stuffed, moderately firm, white. Pileus when young plane, the margin deflexed, then subinfundibuliform, green. Taste acrid.—*Fries*.

617. *Russula sanguinea*. Fr. "Blood-red Russula."

Acrid. Pileus fleshy, firm, convex, then gibbo-depressed and infundibuliform, at length even, moist; margin thin, acute, even; stem spongy or solid, slightly striate, white or reddish; gills decurrent, thin, very crowded, somewhat forked, connected, white.—*Fr. Epicr. p.* 351. *Bull. t.* 42. *Roq. t.* 12, *f.* 1. *Smith, P.M. f.* 17.

In woods.

Stem stout. Pileus fleshy, firm, obtuse, then depressed and infundibuliform, polished, 2-3 in. broad, blood-red, or growing pale about the margin. Flesh firm, cheesy, white. Gills very narrow, and much crowded. Taste acrid and peppery.

618. *Russula rosacea*. Fr. "Rosy Russula."

At length acrid. Pileus compact, convexo-plane, unequal, viscid, then dry, variegated with spots; margin acute, even; stem spongy or solid, even, white, or reddish; gills adnate, rather crowded, plane, unequal, white, divided behind.—*Fr. Epicr. p.* 351. *Bull. t.* 509, *f.* Z.

In woods.

[United States.]

Stem solid, firm, at length spongy within, even, smooth, about 2 in. long. Pileus fleshy, convex, expanded, obtuse, but never depressed, 2-4 in. broad, cuticle when young and moist viscid and separable. Gills in all states adnate, crowded, fragile, forked behind, always persistently white. Spores papillose, almost globular, diameter .00026 in. (*Fig. 52, reduced.*)

619. *Russula sardonias*. Fr. "Changeable *Russula*."

Pileus fleshy, firm, convexo-plane, then depressed, smooth; cuticle thin, adnate, viscid, changing colour; margin even; stem spongy or solid, short, white, or reddish; gills adnate, much crowded, somewhat forked, white, then yellowish.—*Fr. Epicr. p. 353. Schæff. t. 16, f. 5, 6. Krombh. t. 68, f. 1-4.*

Near paths in fir woods.

A robust and firm, but not large species. Stem solid, $1\frac{1}{2}$ -2 in. long, 1 in. thick, even, white, or reddish. Pileus 2-3 in. broad; reddish, pallid yellow, dirty yellow, opaque.

620. *Russula depallens*. Fr. "Bleached *Russula*."

Mild. Pileus fleshy, firm, undulate or irregular, even, opaque; cuticle thin, viscid, adnate, turning pale; margin even, at length slightly striate; stem firm, attenuated downwards, white, becoming cinereous; gills adnexed, crowded, fragile, furcate behind, whitish.—*Fr. Epicr. p. 353. Krombh. t. 66, f. 12-13.*

In pastures.

[United States.]

Stem solid, about $1\frac{1}{2}$ in. long. Pileus rarely depressed, but often undulate, at first pale-reddish or brownish, then whitish or yellowish, in all states opaque. Flesh white, mild. Gills forked at the base with shorter ones intermixed.

Sect. 3. *Rigidæ*.**621. *Russula lactea*. Fr. "Milk-white *Russula*."**

Mild, milk-white. Pileus fleshy, compact, unpolished, then rivulose; margin straight, thin, obtuse, even; stem solid, compact, obese; gills free, thick, distant, rigid, slightly forked.—*Fr. Epicr. p. 355. B. & Br. Ann. N.H. (1866) no. 1133. Paul. t. 74, f. 2.*

On the ground. Aug. King's Cliffe. Esculent.

[Mid. Carolina.]

The thick, distant gills, and milk-white pileus characterise this fine species. Stem $1\frac{1}{2}$ -2 in. long, $1\frac{1}{2}$ in. thick. Pileus 2 in. broad, at first white, even, then whitish-tan coloured, when dry slightly cracked.

622. *Russula virescens*. Fr. "Greenish *Russula*."

Mild; pileus fleshy, firm, globose, then expanded and umbilicate, innato-flocculose, or areolate and warted; margin straight, obtuse, even; stem spongy or solid, stout, sub-rivulose, whitish;

gills free, rather crowded, unequal, and forked.—*Fr. Epicr. p. 355. Schæff. t. 94 (not f. i.) Vitt. t. 3. Sturm. t. 31. Larb. t. 19, f. 3, t. 20, f. 5. Krombh. t. 67, f. 1-10. Berk. Outl. t. 13, f. 6. Huss. ii. t. 11. Eng. Fl. v. p. 23. Barla. t. 16, f. 10-12. Vent. t. 17, f. 1-2.*

In woods. July—Sept. Esculent. [Mid. Carolina.]

Pileus 4 in. broad, convex, at length slightly depressed and irregular, of various livid hues, yellow, purple and green, fleshy, rugulose, very slightly viscid; margin even. The edge of the pileus sometimes hangs down in a singular manner. Gills white, forked, sometimes anastomosing at the base, rather close, moderately rigid, elastic. Stem 1-2 in. high, $\frac{1}{2}$ in. or more thick, obtuse at the base, various in form, slightly reticulated with raised lines. Taste and odour mild.—*M. J. B.* Spores scarcely echinulate, almost globular, .00025 in. diameter.

623. *Russula lepida.* Fr. "Scaly Russula."

Mild. Pileus fleshy, compact, convex, then depressed, unpolished, silky, rimoso-squamose, becoming pale; margin patent, obtuse, even; stem solid, compact, even, white or rosy; gills rounded, rather thick, somewhat crowded, many of them forked, white.—*Fr. Epicr. p. 355. Batsch. f. 12. Huss. ii. t. 32. Krombh. t. 64, f. 19, 20. Hogg. & Johnst. t. 4.*

In woods. Esculent. [Low. Carolina.]

Stem 3 in. long, 1 in. thick, even, white or roseate. Pileus 3 in. broad, opaque, unpolished, somewhat silky, at length rimoso-squamulose and discoloured; colour beautifully rosy-red, the disc especially becoming whitish.

624. *Russula rubra.* Fr. "Red Russula."

Acrid. Pileus fleshy, rigid, convex, then plane or depressed, dry, polished, becoming even; margin patent, obtuse, without striæ; stem solid, hard, stout, white, or red; gills obtusely adnate, rather crowded, whitish, often forked and dimidiate.—*Fr. Epicr. p. 354. Larbr. t. 18, f. 7. Roq. t. 5, f. 2. Krombh. t. 65. Vitt. Mang. t. 38, f. 2. Schæff. t. 15, f. 4-6. Eng. Fl. v. p. 22.*

In woods. Aug. [United States.]

Pileus compact, dry, even, scarcely brittle, of a cellular texture; gills close; stem 2 in. high, firm, often tinged with rose; very bitter, like gall, extremely acrid.—*Fries.*

Sect. 4. Heterophyllæ.

625. *Russula vesca.* Fr. "Edible Russula."

Mild, sweet-tasted. Pileus fleshy, firm, umbilicato-convex, then plane and infundibuliform, venoso-rugose, and streaked; flesh under the viscid cuticle reddish; margin even, or remotely

striate; stem firm, unequal, rivuloso-rugose; gills adnate, rather crowded, unequal, and forked, white, as well as the stem.—*Fr. Epicr. p.* 352. *Krombh. t.* 67, *f.* 12-19. *Vitt. t.* 27. *Bolt. t.* 1. *Paul. t.* 76, *f.* 2, 3. *Huss. i. t.* 89.

In woods. Esculent.

Of medium size. Stem solid, peculiarly reticulated, attenuated at the base. Pileus flesh-red, disc darker, margin at length patent.

626. *Russula cyanoxantha.* Fr. "Blue and Yellow Russula."

Mild. Pileus compact, convex, then expanded and depressed, or infundibuliform, even, rugose or virgate; margin remotely and faintly striate; stem spongy, stuffed but firm, when old cavernose, equal, smooth, even, white; gills rounded behind, connected by veins, broad, little crowded, furcate, mixed with shorter, white.—*Fr. Hym. Suec. ii. p.* 194. *B. & Br. Ann. N.H.* (1866), *no.* 1131. *Schæff. t.* 93. *R. vesca, var. b. Fr. Ep. p.* 353.

In woods. Sept. Fineshade. [United States.]

Colour of the pileus variable, in the typical form lilac or purplish, or greenish olive, disc growing pale and yellowish; margin bluish or livid-purple; flesh firm, of a cheesy consistency, white, under the separable cuticle commonly reddish; pileus 2-3 in. broad or more; stem 2-3 in. long.

627. *Russula heterophylla.* Fr. "Variable Russula."

Mild. Pileus fleshy, firm, convexo-plane, then depressed, even, polished, cuticle very thin, evanescent; margin thin, even, or densely striate; flesh white; stem solid, firm, nearly equal, even, white; gills attenuated, nearly free, thin, much crowded, forked and dimidiate, white.—*Fr. Epicr. p.* 352. *Fl. Dan. t.* 1909, *f.* 1. *Paul. t.* 75, *f.* 1-5. *Badh. i. t.* 10, *f.* 3, *ii. t.* 3, *f.* 3, 4. *Price. f.* 37. *Smith E.M. f.* 3. *Hogg. & Johnst. t.* 9. *Berk. Outl. t.* 13, *f.* 5. *Huss. i. t.* 84. *Cooke. B.F. t.* 4.

In woods. Common. Esculent.

Always mild. Stem firm, solid; pileus never reddish or purple; gills very narrow, much crowded, white. Spores echinulate, 00021×00026 in.

628. *Russula foetens.* Fr. "Fœtid Russula."

Acrid, fœtid. Pileus bullate, then expanded and depressed, rigid, cuticle adnate, viscid; disc fleshy; margin widely membranaceous, tuberculoso-sulcate; stem stout, stuffed, then hollow; gills adnexed, very unequal, and forked, anastomosing by veins, whitish, at first guttate.—*Fr. Epicr. p.* 359. *Krombh. t.* 70, *f.* 1-6. *Bull. t.* 292. *Sow. t.* 415. *Eng. Fl. v. p.* 22. *Smith. P.M. f.* 16.

In woods. July—Sept. Common. [United States.]

Generally rancid and stinking, but at times fragrant; it is not uncommon to find it as sweet smelling as *Ag. odoratus*, Bull.—*W. G. S.*

Gregarious. Pileus 4-5 in. broad, at first convex; the margin broadly folded inwards, convex, at length more or less depressed, with the margin somewhat vaulted, fleshy in the centre; margin thin, furrowed and tubercled, the striæ appearing as if a glutinous membrane were stretched over them, dirty yellow, rather brittle. Gills forked, dirty white or yellowish, moderately broad, connected by veins. Stem 3-4 in. high, above 1 in. thick, obtuse, incrassated at the base, ruggedly hollow within, as if eaten by snails, white or with a dirty yellow tinge, depresso-tomentose, beneath the gills minutely pitted longitudinally, flesh rather yellow. Highly acrid, odour very strong and penetrating, empyreumatic, somewhat resembling that of prussic acid, but exceedingly disagreeable.—*M. J. B.* Spores minutely echinulate, almost globular, diameter .00032 in.

Sect. 5. Fragiles.

629. *Russula emetica.* Fr. "Emetic Russula."

Acrid. Pileus fleshy, expanded or depressed, polished, shining; margin patent, at length sulcate; flesh white beneath the reddish separable cuticle; stem spongy-solid, firm, elastic, even, white or reddish; gills free, equal, broad, somewhat distant, white.—*Fr. Epicr. p. 357. Lenz. f. 15. Buxb. v. t. 47, f. 1. Ann. N.H. no. 333. Krombh. t. 66, f. 4-7? Cooke B.F. t. 22. Eng. Fl. v. p. 21. Barla. t. 14, f. 4-9. Smith P.M. f. 21.*

In woods. July—Dec. Poisonous. [United States.]

Pileus 2-5 in. broad, glutinous when young, smooth, hemispherical, at length plane, depressed in the centre; margin thin, striato-sulcate, purple, rose-red, bluish, fuscous, yellow, or even white; gills rather distant, broad, rigid, thickish, connected by veins, equal, with a very few smaller interspersed, always white; stem 2-3 in. high, longitudinally rugulose, firm, solid, white, or tinged with the colour of the pileus, very acrid and poisonous.—*Eng. Fl.* Known by its very acrid taste and free gills, between which and the stem is a distinct channel.—*M. J. B.* Spores echinulate, almost globular, diameter .00028 in.

630. *Russula ochroleuca.* Fr. "Ochrey Russula."

Acrid. Pileus fleshy, expanded or depressed, polished, cuticle adnate, turning pale; margin patent, becoming even; stem spongy-stuffed, firm, reticulato-rugulose, white then cinereous; gills rounded behind, connected, broad, subequal, white then pallid.—*Fr. Epicr. p. 358. Krombh. t. 64, f. 7-9. Larbr. t. 19, f. 1. Buxb. v. t. 45, f. 2. Ann. N.H. no. 707.*

In fir woods. Sept. [United States.]

Pileus always yellowish, turning pale, about the same size as *R. emetica*, from which it differs in the finely reticulated rugose stem, which is white then greyish, and the adnate cuticle of the pileus. Spores papillose, diameter .00029 in.

631. *Russula fragilis.* *Fr.* "Fragile Russula."

Very acrid; pileus lax, fleshy, thin, plane, depressed, unequal, polished, cuticle thin, becoming pale, opaque, slightly viscid; margin tuberculoso-striate; stem stuffed, then hollow, shining; gills fixed, thin, crowded, ventricose, white.—*Fr. Epicr. p.* 359. *Krombh. t.* 64, *f.* 12-18. *Bull. t.* 509, *f.* T.U. *Vent. t.* 33, *f.* 4, 5. *Corda. Sturm. t.* 53. *Barla. t.* 14, *f.* 10-12.

In woods. Common.

[S. Carolina.]

Stem 1½-2 in. long, always finely striate, white. Pileus 1-1½ in. broad, rarely more, colour variable, always opaque.

632. *Russula integra.* *Fr.* "Entire Russula."

Mild. Pileus fleshy, expanded or depressed, with a viscid cuticle, growing pale; margin thin, at length sulcate and tuberculose; flesh white; stem spongy, stuffed, even, ventricose, white; gills nearly free, very broad, equal, distant, white, then pallid, powdered with yellow.—*Fr. Epicr. p.* 360. *Schæff. t.* 92. *Vitt. t.* 21. *Krombh. t.* 64, *f.* 4-6, *t.* 66, *f.* 14, 15. *Batt. t.* 16, *c.* *Ann. N.H. no.* 334. *Harz. t.* 59.

In woods. Aug. Bristol.

Distinguished by its mild taste, its at length sulcate and tuberculated margin, its white stem, and its gills, which gradually assume a pale dirty yellow hue.—*M. J. B.*

633. *Russula decolorans.* *Fr.* "Discolored Russula."

Mild. Pileus fleshy, firm, spherical, then expanded or depressed, polished, thin, cuticle becoming pale; margin thin, even; stem spongy, solid, elongated, cylindrical, rugoso-striate, white then cinereous; gills adnexed, forked behind, thin, crowded, white, then yellowish.—*Fr. Epicr. p.* 361. *Mag. Zool. & Bot. no.* 60.

In woods. Sept. Esculent.

Distinguished from *R. alutaceus* by its pale spores, in consequence of which the gills remain much longer white. The inside of the stem, which is thick and spongy, acquires in general a cinereous tinge.—*M. J. B.*

634. *Russula aurata.* *Fr.* "Golden Russula."

Becoming acrid. Pileus fleshy, rigid, convexo-plane, shining; margin at length striate; flesh under the viscid cuticle lemon-

coloured ; stem spongy or compact, rather striate, white or lemon-coloured ; gills rounded behind, free, broad, equal, shining, edge lemon-yellow.—*Fr. Epicr. p.* 360. *Krapf. t.* 5. *Schæff. t.* 15, *f.* 1-3. *Krombh. t.* 66, *f.* 8-11. *Ann. N.H. no.* 335.

In woods. Aug. Bristol.

A most splendid species, distinguished by its golden yellow shining pileus, and yellow-margined gills.—*M. J. B.*

Stem firm, 2-3 in. long, cylindrical, obsoletely striate. Pileus 2-3 in. broad. Flesh lemon-coloured beneath the adnate cuticle.

635. *Russula veteriosa.* Fr. "Sleepy Russula."

Acrid. Pileus loosely fleshy, plane, then depressed, polished, cuticle thin, adnate, becoming pale ; margin membranaceous, even ; stem spongy, then hollow, soft, equal, even, fragile, white ; gills adnate, narrow, broader behind, unequal, straw-coloured.—*Fr. Epicr. p.* 354. *Paul. t.* 74, *f.* 3. *B. & Br. Ann. N.H.* (1866), *no.* 1132. *Krombh. t.* 66, *f.* 18, 19.

On the ground. Chatteris.

Flesh white, spongy. Pileus 2-3 in. broad, rose-coloured or flesh-coloured, soon with the disc whitish or yellowish.

636. *Russula nitida.* Fr. "Shining Russula."

Nauseous, rather foetid. Pileus somewhat fleshy, becoming rigid, convexo-plane then depressed, shining, discoid ; margin thin, from the first striate and tuberculose ; flesh white ; stem stuffed, soft, white, growing pallid ; gills adnexed, seceding, then crowded, shining, white, then yellow, naked.—*Fr. Epicr. p.* 362. *Schæff. t.* 254. *Krombh. t.* 66, *f.* 1-3. *Berk. Outl. t.* 13, *f.* 7. *Eng. Fl. v. p.* 21.

In woods. King's Cliffe.

[United States.]

Pileus 1-2 in. broad, convex, becoming nearly plane or depressed, viscid when moist ; margin very thin, at first even, afterwards furrowed and tubercled, mostly yellow, but occasionally tinged with purple ; gills buff, connected by veins, all equal, free ; spores pale yellow ; stem 1-2 in. long, $\frac{1}{2}$ in. thick, spongy, at length hollow, white or yellowish, covered with minute white meal.—*M. J. B.*

637. *Russula alutacea.* Fr. "Tan-coloured Russula."

Mild. Pileus fleshy, expanded or depressed, with a viscid cuticle, growing pale ; margin thin, at length striate, tuberculose ; flesh white ; stem spongy, solid, stout, white or reddish, even ; gills at first free, thick, equal, somewhat distant, yellow, then

ochraceous tan-coloured, naked.—*Fr. Epicr. p.* 362. *Vitt. t.* 34. *Roq. t.* 10, *f.* 4. *Krombh. t.* 1, *f.* 21, 22, *t.* 64, *f.* 1-3. *Berk. Outl. t.* 13, *f.* 8. *Hogg & Johnst. t.* 15. *Eng. Fl. v. p.* 21. *Price, f.* 36. *Barla. t.* 14, *f.* 1-3. *Smith. E.M. f.* 6.

In woods. Common. Esculent. [United States.]

Pileus 3 in. broad, fleshy, smooth, viscid when moist, depressed; margin at first even, more or less furrowed and tubercled when old, pink, livid, olive, &c.; gills broad, equal, sometimes slightly forked, ventricose, free, connected by veins; spores yellow; stem $1\frac{1}{2}$ in. long, 1 in. thick, blunt, surface longitudinally wrinkled or grooved, solid, spongy within, smooth, white, sometimes yellow. Taste mild, pleasant; acrid when old.—*M.J.B.*

638. *Russula lutea.* *Fr.* "Yellow Russula."

Mild. Pileus rather firm, plano-depressed, with a viscid cuticle, becoming pale; flesh white; margin even; stem stuffed, then hollow, soft, white; gills free, crowded, connected by veins, egg-yellow.—*Fr. Epicr. p.* 366. *Eng. Fl. v. p.* 21.

In woods. Scotland. [United States.]

Pileus 1-2 in. broad, plano-depressed, rather viscid, yellow, becoming pale, rarely white; gills connected by veins; stem more or less hollow, slender; taste mild; brittle.—*Fries.* Spores yellow, echinulate, diameter .00032 in.

639. *Russula vitellina.* *Fr.* "Egg-yellow Russula."

Strong-scented, mild. Pileus submembranaceous, at length tuberculoso-striate, self-coloured; disc minute, rather fleshy; stem thin; gills free, seceding, equal, saffron-yellow.—*Fr. Epicr. p.* 363. *Batsch. f.* 72.

In fir woods.

Stem equal, scarcely exceeding an inch long, 2 lin. thick. Pileus about an inch broad, yellow, then becoming pale. Gills distant, rather thick, connected by veins.—*Fries.*

640. *Russula chamæleontina.* *Fr.* "Chameleon Russula."

Mild, fragile. Pileus fleshy, plane or depressed, pellicle thin, discoloured, viscid; margin smooth, then striate; stem hollow, white; gills much crowded, even, furcate, yellow.—*Fr. Obs. i., no.* 89. *B. & Br. Ann. N.H. (1865), no.* 1014.

In woods. King's Cliffe. Sept. 30, 1863.

Pileus rosy-red, purplish-lilac, &c., ultimately wholly or partially yellowish, adnexed or free, narrow.—*Fries.*

Gen. 11.

CANTHARELLUS, Adams. Fung. Ord. V.



Fig. 53.

Spores white ; veil entirely absent ; pileus fleshy or membranaceous ; stem confluent with the hymenophore, or absent ; gills decurrent, folded, more or less thick and swollen, branched ; trama floccose. (Fig 53.)

HAB. Growing on the ground, or on rotten wood, moss, etc.

This genus holds an intermediate place between *Agaricus* and *Craterellus*, some species being close to one, some to the other genus. Some are said to be poisonous, others edible.—W. G. S.

Sect. 1. *Mesopodes*.

641. Cantharellus cibarius. Fr. "Edible Chantarelle."

Egg-yellow. Pileus fleshy, at first repand, smooth, at length turbinate ; stem solid, attenuated downwards ; gills thick, distant, of the same colour.—Fr. *Epicr.* p. 365. *Grev. t.* 258. *Hogg & Johnst. t.* 16. *Lenz. f.* 27. *Krombh. t.* 45, f. 1-11. *Vitt. t.* 25, f. 1. *Sow. t.* 46. *Batsch. f.* 120. *Paul. t.* 36. *Cooke B.F. t.* 13, f. 1. *Smith E.M. f.* 8. *Gard. Chron.* (1860), p. 312. *Badh. i. t.* 9, f. 2, ii. t. 8, f. 1. *Price f.* 94. *Barla. t.* 28, f. 7-15. *Eng. Fl. v.* p. 125. *Vent. t.* 39, f. 3, 4.

In woods. Common. Esculent. [United States.]

Subgregarious. Pileus 1-4 in. broad, fleshy, firm, variously lobed, depressed, the margin vaulted, smooth, shining, of a rich yolk of egg yellow, paler when dry, flesh white or yellowish. Folds much sinuated, but evidently forked, thick, fleshy, decurrent ; stem 1-2 in. high, $\frac{1}{2}$ - $\frac{1}{2}$ in. thick, attenuated downwards, smooth, tough, yellow, diffused into the pileus. Smell very agreeable like that of ripe apricots, taste agreeable, but pungent.—M. J. B. Spores $\cdot 0003 \times \cdot 0002$ in.

642. Cantharellus aurantiacus. Fr. "False Chantarelle."

Nearly orange-colour. Pileus fleshy, soft, depressed, tomentose ; stem stuffed, unequal ; gills crowded, straight, darker than the pileus.—Fr. *Epicr.* p. 365. *Jacq. Coll. ii. t.* 14, f. 3. *Batsch. f.* 37. *Sow. t.* 413. *Schæff. t.* 206. *Berk. Outl. p.* 14, f. 1. *Krombh. t.* 46, f. 3-6. *Smith P.M. f.* 19.

In fir woods and on heaths. Common. [S. Carolina.]

Stem at length hollow, 2 in. long, somewhat curved and unequal, ochraceous. Pileus soft, depressed, 2-3 in. broad, sub-tomentose, ochraceous-orange. Margin involute. Gills repeatedly dichotomous and crowded, dark-orange.

643. *Cantharellus Brownii*. B. & Br. "Brown's Chantarelle."

Ochraceous-white, or cream-coloured. Pileus thin, convex, subumbonate; stem slender, tough, stuffed; folds rather distant, linear, extremely narrow, sometimes forked, obtusely decurrent. *B. & Br. Ann. N.H. ser. ii., vol. ii., p. 262. Berk. Outl. p. 216.*

Amongst grass. Oct. Hitchin.

Whole plant of a pale ochraceous cream colour. Pileus orbicular, thin, convex, subumbonate, $\frac{1}{2}$ in. across, sometimes rather larger, obscurely silky. Stem slender, $1\frac{1}{2}$ -2 in. high, scarce 1 line thick, nearly equal, subfurfuraceous, furnished with a little white fibrillose mycelium at the base, which sometimes forms a small earthy ball, rather tough, stuffed. Folds linear, very narrow, sometimes slightly forked, obtusely decurrent, interstices smooth, occasionally quite obsolete, except towards the margin. Hymenium nearly white.—*B. & Br.*

644. *Cantharellus umbonatus*. P. "Umbonate Chantarelle."

Pileus fleshy, thin, umbonate, then depressed, flocculose, blackish-cinereous; stem stuffed, equal, paler; gills straight, crowded, white.—*Fr. Epicr. p. 365. Jacq. Coll. ii. t. 16, f. 1. Ann. N.H. no. 701.*

Amongst moss. Mossburnford. [United States.]

Stem 3 in. long, about 4 lines thick, elastic, villous at the base, cinereous. Pileus 1 in. and more broad, even, dry, between flocculose and silky dry. Flesh soft, white, reddish when wounded.

645. *Cantharellus tubæformis*. Fr. "Tubæform Chantarelle."

Pileus between fleshy and membranaceous, infundibuliform, expand, and lobed, flocculose, brownish, turning pale; stem hollow, smooth, orange-tawny, at length compressed, lacunose; gills thick, distant, multifid-branching, yellow or dingy, naked.—*Fr. Epicr. p. 366. Fl. Dan. t. 2080, f. 1. Pers. Ic. & Desc. t. 6, f. 1. Sturm. t. 30. Batt. t. 23, f. 1. Eng. Fl. v. p. 125. Ann. N.H. no. 74. Krombh. t. 4, f. 8-10, t. 46, f. 7-9. Berk. exs. no. 140.*

In woods. Aug.—Oct. [United States.]

Gregarious. Pileus 2 in. broad, thin, at first convex, at length much undulated, depressed, and very deeply umbilicate, occasionally pervious, scrobiculato-squamose, brownish-yellow. Folds straight, forked, slightly anastomosing, cinereous-yellow, frosted with a white bloom. Stem 2 in. high,

$\frac{1}{2}$ in. thick, hollow, compressed, thickest downwards, smooth, slightly downy at the base, saffron-coloured, brownish yellow above. Spores round, white.—*M. J. B.* Spores $\cdot 0003 \times \cdot 00018$ in.

CANTHARELLUS LUTESCENS (Bull. t. 473, f. 3) has a paler yellow stem, and the gills less divided; the pileus, moreover, is merely umbilicate. It is scarcely to be deemed a distinct species, and occurs in the same localities with the above.—*M. J. B.*

646. *Cantharellus infundibuliformis.* Fr. “Funnel-shaped Chantarelle.”

Pileus somewhat membranaceous, umbilicate, then infundibuliform, floccoso-rugose, dingy yellow, growing pale; stem fistulose, even, smooth, yellow; gills thick, distant, dichotomous, yellow or cinereous, at length pruinose.—*Fr. Epicr. p. 366. Sow. t. 47. Krombh. t. 4, f. 8-10. Fl. Dan. t. 1617. Vaill. t. 12, f. 9, 10. Cooke exs. no. 226.*

In woods.

Stem 2-3 in. long, about 2 lin. thick, somewhat thickened at the base, even, smooth, always yellow. Pileus 1-2 in. broad, at length funnel-shaped, ordinarily pervious to the base, when moist yellowish-cinereous or dingy, paler when dry, margin at length waved.

647. *Cantharellus radicosus.* B. & Br. “Rooting Chantarelle.”

Small. Pileus deeply umbilicate, floccose, black; stem pallid, rooting; hymenium white; gills narrow.—*B. & Br. Ann. N.H. (1860), no. 1134. Saund. & Sm. t. i. C. carbonarius, A. & S. no. 1129.*

On charcoal heaps, &c. Sept.—Nov.

Pileus $\frac{3}{4}$ -1 in. across, deeply umbilicate, dark brown or black, rough, with radiating flocci; stem rooting, deeply pallid; gills narrow, white. Two or three pilei often grow from the same obconical root, which is white and spongy.—*B. & Br.* Spores $\cdot 0035 \times \cdot 0002$ in.—*W. G. S.* Apparently not the *Cantharellus carbonarius* of Fries.

648. *Cantharellus cinereus.* Fr. “Grey Chantarelle.”

Pileus submembranaceous, infundibuliform, pervious to the base, villososquamulose, dingy black; stem hollow, of the same colour; gills thick, distant, cinereous.—*Fr. Epicr. p. 366. Krombh. t. 45, f. 12. Bull. t. 465, f. 2. Bolt. t. 34. B. & Br. Ann. N.H. 1865, no. 1016*-1139*. Eng. Fl. v. p. 126. Letell. t. 684.*

In woods. Rare. Halifax. Near Worcester (*E.L.*) Burnham Beeches. [United States.]

Spores $\cdot 00035 \times \cdot 00022$ in. Sporophores obtuse. (*Fig. 53, reduced.*)

Sect. 2. Pleuropus.

649. Cantharellus muscigenus. *Fr.* "Moss Chanterelle."

Pileus submembranaceous, spathulate, horizontal, smooth, zoned, brown, then whitish-cinereous; stem lateral, short, villous at the base; gills swollen, distant, branched, of the same colour. —*Fr. Epicr. p. 368. Bull. t. 288, 498. f. 1. Nees. f. 236. Eng. Fl. v. p. 127. Schn. Sturm. t. 3.*

On the larger mosses. Berwick. Bristol. [S. Carolina.]

Pileus membranaceous, tough, nearly semicircular, somewhat zoned, slightly undulated, dirty-white, cinereous, or dingy. Folds somewhat tumid, divergent, scarcely anastomosing, confluent behind; stem villous at the base, sometimes obsolete. —*Fries.*

Sect. 3. Resupinati.

650. Cantharellus lobatus. *Fr.* "Lobed Chantarelle."

Membranaceous, sessile, horizontal, lobed, brown; gills fold-like, distinct, branched, divergent. —*Fr. Epicr. p. 369. Fl. Dan. t. 1077. Bolt. t. 177. Eng. Fl. v. p. 127.*

On mosses, in swamps.

Pileus 2 lines, $1\frac{1}{2}$ in. broad, membranaceous, horizontal, often at length vertical, attached laterally by a few byssoïd fibres, which sometimes run down the moss for some distance, pale, cinereous umber; margin nearly white, under a lens most minutely scabrous, as if it were innato-fibrillose, occasionally there are two or three faint zones. Hymenium paler, consisting of radiating, more or less anastomosing wrinkles, with many connecting reticulate veins. Spores round, rather large. When old often very much lobed and crisped, and then the wrinkles, especially at the base, are reticulate, though towards the margin they continue distinct. —*M. J. B.*

651. Cantharellus retirugus. *Fr.* "Furrowed Chantarelle."

Membranaceous, expanded, repand, lobed, whitish cinereous, fixed behind with little threads; gills radiating from the centre, very thin, reticulated. —*Fr. Epicr. p. 369. Bull. t. 498, f. 1. Sow. t. 348. Berk. Outl. t. 14, f. 2.*

On mosses, in swamps. King's Cliffe.

Similar to *C. lobatus*, but the gills are thinner and reticulated. Pileus membranaceous, sub-rotund, 3-5 lin. broad, margin at first entire, then split, cinereous-white above, darker beneath.

Gen. 12.

NYCTALIS, Fr. Gen. Hymen.

Fig. 54.

Veil universal, floccoso-pruinose ; pileus in the British species fleshy and pruinose or pulverulent ; stem confluent with the hymenophore ; gills broad, simple, unequal, thick, fleshy, juicy, or subgelatinous, edge obtuse, not descending on the stem.

(Fig. 54.)

HAB. The British species are small and parasitic on other Agarics.

This genus consists of fleshy putrescent Fungi. Some species grow in subterranean passages.

652. Nyctalis asterophora. Fr. "Star-bearing Nyctalis."

Pileus somewhat fleshy, conical, then hemispherical, cuticle flocculoso-pruinose, breaking up into a fawn-coloured stratum ; stem stuffed, pruinose, then brownish, twisted ; gills adnate, distant, rather forked, straight, dingy.—Fr. *Epicr. p.* 371. *Bull. t.* 516, f. 1. *Sturm. t.* 26.

On dead *Russula nigricans*. Common. [Mid. & Up. Carolina.]

Stem scarcely exceeding $\frac{1}{2}$ an in., $\frac{1}{2}$ –1 lin. thick, equal, twisted, at first whitish and pruinose, then brownish. Pileus white when young, papillate, then cracking, pulverulent and fawn-coloured. Gills thick. The powder of the pileus consists of the stellate bodies, constituting the spores in the genus *Alsterophora*. Diameter '00055 in. Spores '0001 \times '00005 in.

(Fig. 54, natural size.)

653. Nyctalis parasitica. Fr. "Parasitic Nyctalis."

Pileus somewhat fleshy, conical, then expanded, unequal, cuticle persistent, grey, pruinose ; stem minutely fistulose, flocculoso-villous, whitish ; gills adnate, thick, distant, at length contorted and anastomosing, brownish.—Fr. *Epicr. p.* 372. *Bull. t.* 574, f. 2. *Sow. t.* 543. *Berk. Outl. t.* 19, f. 2. *Eng. Fl. v. p.* 52. *Berk. exs. no.* 130.

On *Russula adusta* and *R. foetens*.

Pileus $\frac{1}{2}$ in. broad, conico-campanulate, silky, sub-carnose, somewhat irregular, grey, with a slight tinge of umber at the apex, flesh dark ; gills darker than the pileus, paler at the edges, thick, distant, somewhat forked and anastomosing, connected by veins, broader towards the apex, slightly adnate, ventricose ; stem 1–2 in. high, 1 line thick, thickest downwards, very silky, especially at the base, crisp, dark within. Odour like *Polyporus squamosus*.—M. J. B.

Gen. 13.

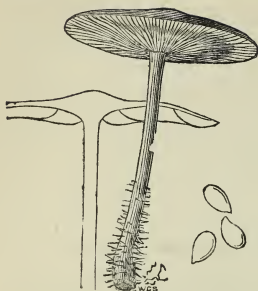
MARASMIUS, Fr.

Fig. 55.

Spores white, sub-elliptical; pileus tough, fleshy, or membranaceous; stem central (in one species it is absent), confluent with the hymenophore, but of a different texture; gills thick, tough, and coriaceous, confluent at the base, generally distant, and rarely decurrent, with a sharp entire edge. (Fig. 55.)

HAB. Epiphytal, or growing on decayed leaves, or the roots of grasses.

This genus, closely allied to *Collybia*, commences the series of Agarics that are not putrescent, but which dry up with drought, and come to life with rain. This biological character is of great importance; by its neglect species nearly related have been widely separated. The texture of all the species is tough, distinguishing them from the preceding. The species are mostly small and slender. Some are edible, others have an offensive, foetid, or alliaceous smell — W. G. S.

Sect. 1. *Collybiæ*.**654. Marasmius urens. Fr. "Stinging Marasmius."**

Acrid. Pileus between fleshy and coriaceous, convex, then plane, smooth, even, at length wrinkled or rivulose; stem fibrous, solid, rigid, pallid, mealy with white fibrils, and clothed with white down at the base; gills free, joined behind, pallid, somewhat yellowish, becoming brownish, at length remote, distant, firm.—Fr. *Epicr. p.* 373. *Bull t.* 528, f. 1. *Fl. Dan. t.* 2018, f. 1. *Berk. Outl. t.* 14, f. 3. *Ann. N.H. no.* 275. *Price, f.* 13. *Smith. P.M. f.* 30.

In woods.

Gregarious, caespitose. Stem 2-3 in. long, 3 lin. thick, equal, clothed everywhere with white flocci, pallid, villous at the base. Pileus 2-3 in. broad, pinkish-tawny; margin thin, involute. Taste acrid, stinging. Spores $\cdot 0001 \times \cdot 00012$ in.

655. Marasmius peronatus. Fr. "Masked Marasmius."

Acrid. Pileus between coriaceous and membranaceous, convexo-plane, opaque, at length lacunose; margin striate; stem fibrous, stuffed, outer coat villous, yellow, then rufescent, base peronate and strigose; gills adnexed, seceding, rather thin and

crowded, pallid, then rufescent.—*Fr. Epicr. p. 373. Bolt. t. 58. Sow. t. 37. Fl. Dan. t. 2018, f. 2. Berk. Outl. t. 14, f. 4. Eng. Fl. v. p. 47. Cooke, B.F. t. 14, f. 2. Berk. exs. no. 125.*

In woods, amongst leaves. Common.

Pileus 1-2½ in. broad, convex or campanulate, at length expanded, sometimes umbonate, carnosio-coriaceous, subrufescent or yellowish, pallid when dry, clothed with a minute matted silkiness. Gills of the colour of the pileus, with a yellowish margin, distant, rounded behind, almost free. Stem 2-3 in. high, 2 lines thick, solid above and downy, hollow below, and there covered with dense yellow strigæ. Taste acid.—*M. J. B. Spores pip-shaped, .00028 × .00015 in. (Fig. 55, reduced.)*

656. Marasmius porreus. Fr. "Garlic Marasmius."

Strong scented. Pileus between coriaceous and membranaceous, convex, then expanded, striate, floccid, disc of the same colour, even; stem stuffed, then hollow, tough, without juice, incrassated at either end, reddish-brown, pubescent; gills free, seceding, distant, firm, yellowish, becoming pallid.—*Fr. Epicr. p. 374. Sow. t. 81. Bull. t. 158. Eng. Fl. v. p. 48.*

In woods, amongst leaves. Sept.—Nov.

Smell strong of garlic, persistent sometimes for years in dried specimens. Pileus ½-1 in. broad, plane, slightly depressed, dirty white, with a brownish shade, paler on the margin, which is membranaceous, and regularly striate. Gills nearly free, paler than the pileus, slightly connected by veins. Stem 2-3 in. high, 2-3 lines thick, velvety, albido-pulverulent, rufescent, tomentose below, pale above, fistulose.—*M. J. B. Spores pip-shaped, .00015 × .00025 in.*

657. Marasmius oreades. Fr. "Fairy-ring Champignon."

Pileus fleshy, tough, convexo-plane, then somewhat umbonate, smooth, growing pale; stem solid, equal, naked, with a villous interwoven coat, pallid, base naked; gills free, broad, distant, cream-coloured.—*Fr. Epicr. p. 375. Bolt. t. 151. Grev. t. 323. Vitt. t. 10, f. 1. Krombh. t. 43, f. 11-16. Sow. t. 247. Schæff. t. 77. Bull. t. 144, 528, f. 2. Paul. t. 103, f. 1-4. Price f. 11. Cooke, B.F. t. 14, f. 1. Berk. Outl. t. 14, f. 5. Eng. Fl. v. p. 48. Gard. Chron. (1860), p. 190. Trans. Woolh. Cl. (1867), t. xii. Smith. E.M. f. 28. Badh. i. t. 8, f. 3, ii. t. 7, f. 4.*

In exposed pastures, forming rings. Common. Esculent.

[Mid. Carolina.]

Gregarious. Pileus ½-1½ in. broad, smooth, fleshy, convex, at length nearly plane, more or less umbonate, generally more or less compressed and sinuate, tough, coriaceous, elastic, wrinkled, and sometimes cracked, watery brown, as it becomes dry cream-coloured, margin pale; flesh white, quite distinct

from that of the stem. Gills free, pale, distant, slightly ventricose. Stem 1-2 in. high; 2-3 lines thick, equal, solid, very tough, the outer coat squamuloso-fibrous, base downy, somewhat rooting, and attached to the roots of grass. Taste and odour strong but agreeable.—*M. J. B.*

658. Marasmius fusco-purpureus. *Fr.* "Purple-brown Marasmius."

Inodorous. Pileus rather fleshy, convexo-plane, sub-umbilicate, growing pale; stem fistulose, smooth, without juice, brown-purple, base rubiginous, strigose; gills annulato-adnexed, at length free, distant, rufescent.—*Fr. Epicr. p. 377. Pers. Ic. & Desc. t. 4, f. 1-3. Eng. Fl. v. p. 49. Mag. Zool. & Bot. no. 41. Berk. exs. no. 127.*

In woods, amongst leaves. Common.

Stem short, scarcely exceeding 1 in. long, 1-2 lin. thick, smooth, at first pallid, then rufous or blackish purple, with a strigose, rubiginous, woolly base. Pileus $\frac{1}{2}$ -1 in. broad, brownish purple, growing pale, tan-coloured and rugulose.

659. Marasmius Wynnei. *B. & Br.* "Wynne's Marasmius."

Inodorous, cæspitose. Pileus fleshy, convexo-plane, subumbonate, lilac brown, tardily changing colour; stem fistulose, of the same colour, furfuraceous; gills thick, distant, adnexed, bright coloured.—*Berk. Outl. p. 220, t. 19, f. 3. Ann. N.H. no. 802.*

Amongst leaves, twigs, &c. Coed Coch.

Gregarious or cæspitose. Pileus 1-1 $\frac{1}{2}$ in. across, variously tinged with brown and lilac, not rapidly changing colour, umbonate, slightly fleshy. Stem 2 in. high, 1 $\frac{1}{2}$ line thick, rather paler than the pileus, fistulose, furfuraceous, springing from a white mycelium, but by no means strigose or tawny at the base. Gills distant, thick, moderately broad, adnexed, beautifully tinged with lilac; interstices even.—*B. & Br.*

660. Marasmius erythropus. *Fr.* "Pallid Marasmius."

Inodorous. Pileus rather fleshy, convexo-plane, then obtuse, even, turning pale, at length rugose; stem fistulose, striate, smooth, dark-red, somewhat pruinose when dry, base whitish, strigose; gills free, seceding, broad, lax, connected by veins, quite entire, whitish.—*Fr. Epicr. p. 378. Kromb. t. 3, f. 8. Ann. N.H. no. 65.*

Amongst leaves, near stumps.

[Cinnamati.]

Stem tough, 2-3 in. and more long, 2 lin. thick, at length compressed, blackish-red, smooth above, paler from the first, base strigose. Pileus about an inch broad, pallid, with a pinkish tinge. Gills broad, lax.

661. Marasmius terginus. *Fr.* "Clustered Marasmius."

Inodorous. Pileus somewhat fleshy, convexo-plane, obtuse, shining, whitish; stem fistulose, smooth above, shining, pallid, reddish below, whitish-villous, rooting; gills seceding, free, scarcely crowded, narrow, pallid.—*Fr. Epicr. p. 377. B. & Br. Ann. N.H. 1866, p. 55. M. Stephensii, B. & Br. Ann. N.H. ser. ii. vol. xiii. p. 403, no. 708.*

Amongst dead beech leaves. Dursley.

Fasciculated. Pileus $\frac{1}{2}$ -1 in. across, depressed and wrinkled in the centre, opaque, tough, cream-coloured, stained with vinous red, especially when bruised; flesh white, thin; stem 1-2 in. high, hollow, twisted, white and mealy above, quite smooth and shining below, of a rich light nut-brown; gills few and distant, rather broad, of the same colour as the pileus. Taste and smell like that of *M. oreades*.—*B. & Br.*

662. Marasmius impudicus. *Fr.* "Strong-scented Marasmius."

Fœtid. Pileus rather fleshy, tough, convexo-plane, then depressed; margin at length striate and plicate, growing pale; stem fistulose, equal, purplish, when dry everywhere velvety-white, base naked, rooting; gills nearly free, ventricose, flesh-colour, then whitish.—*Fr. Epicr. p. 377. Br. Bath. Trans. 1870, p. 77. Fr. Mon. Hym. ii. p. 222.*

On and about pine trunks. Hanham.

Small, gregarious. Stem easily compressed, 2 in. long, 1 line thick, varying from rufous, rufous-brown, to violet. Pileus $\frac{1}{2}$ -1 in. broad, bay-brown or rufous, growing pale; margin membranaceous, paler.

663. Marasmius archyropus. *Fr.* "Tan-coloured Marasmius."

Inodorous. Pileus rather fleshy, convexo-plane or depressed, smooth, growing pale; stem stuffed, then hollow, rigid, straight, pallid, rufous beneath the white tomentose bark, base similar; gills adnexed, seceding, crowded, linear, pallid.—*Fr. Epicr. p. 378. Pers. M.E. t. 25, f. 4. Ann. N.H. no. 276.*

Amongst leaves. Rare. Bristol. [Mid. & Up. Carolina.]

Fasciculate. Pileus about an inch across, tan-coloured. Stem scarcely 1 lin. thick.

664. Marasmius scorodonius. *Fr.* "Strong-scented Marasmius."

Strong-scented. Pileus somewhat fleshy, tough, even, soon plane, rugulose, and crisped; stem fistulose, equal, quite smooth, shining, rufous; gills adnate, crisp, whitish.—*Fr. Epicr. p. 379.*

Sv. Bot. t. 175. Schæff. t. 99. Paul. t. 104, f. 10, 11. Lenz. f. 17. Eng. Fl. v. p. 49.

Heaths and dry pastures. Rare. Esculent.

[S. Carolina.]

Pileus $\frac{1}{2}$ in. or more broad, plane, rugulose; gills connected by veins, seceding. Stem 1 in. or more high, nearly 1 line thick, scarcely rooting, with a strong alliaceous odour.—*Fries.*

665. Marasmius Vaillantii. *Fr.* "Vaillant's Marasmius."

Inodorous. Pileus submembranaceous, tough, soon expanded, depressed, plicato-rugose, turning whitish; stem stuffed, smooth, bright brown, thickened above and paler; gills broad, adnate, thick, distant, white.—*Fr. Epicr. p. 380. Vaill. t. 11, f. 21-23. Buxb. iv. t. 36, f. 2. Mich. t. 74, f. 4. Eng. Fl. v. p. 53. Ann. N.H. no. 66.*

On dead wood. Sept.

[Low. & Mid. Carolina.]

Pileus $\frac{1}{2}$ in. broad, plane, now and then depressed, striato-rugose; gills distinct, simple, triangular, and thence apparently decurrent; stem 1 in. high, very tough, yellowish when young, base smooth, black, even and shining, the middle bay, the apex whitish, most minutely pruinose.—*Fries.*

666. Marasmius angulatus. *Pers.* "Angular Marasmius."

Gregarious, small. Pileus between fleshy and membranaceous, at first hemispherical, then becoming plane, at length angularly plicate, whitish tawny; gills distant, paler; stem slender, fistulose, greyish-rufescent.—*B. & Br. Ann. N. H. (1865) no. 1018. Agaricus angulatus, Pers. Myc. Eur. iii., p. 155, tab. 26, f. 3-4. Mich. t. 74, f. 4.*

On grass. Cefn, Denbighshire, just above the Bone cave.

Very different from *M. Vaillantii*, to which *Fries* refers it.—*M. J. B.*

Stem dry, rigid, slightly thickened towards either extremity, slightly hairy at the base; gills white when young, brownish when mature, equal; pileus dry, mutable in form, at first globose, then flattened or concave; margin angularly crenulate.—*Pers.*

667. Marasmius languidus. *Fr.* "Languid Marasmius."

Inodorous, whitish. Pileus somewhat fleshy, convex, gibbous, or umbilicate, flocculose, rugoso-sulcate; stem stuffed, incrassated upwards, pallid, naked, brownish downwards; gills adnate then decurrent, distant, broad, connected by veins.—*Fr. Epicr. p. 379. Pers. Myc. Eur. iii. t. 26, f. 6. B. & Br. Ann. N.H. (1865) no. 1017. Batt. t. 27, f. O.*

On dead leaves of grass. Coed Coch.

* Small, gregarious, tough, inodorous. Stem scarcely an inch long, $\frac{1}{2}$ -1 lin. thick, brownish below, usually villous. Pileus at first convex, margin involute, $\frac{1}{2}$ in. broad, white, with a pinkish or yellowish tinge.

668. Marasmius foetidus. *Fr.* "Foetid Marasmius."

Foetid. Pileus submembranaceous, tough, convex, then expanded and umbilicate, striato-plicate, turning pale when dry, subpruinose; stem fistulose, velvety or pruinose, bright brown, base flocculose; gills annulato-adnexed, distant, rufous-yellow. —*Fr. Epicr. p. 380. Sow. t. 21. Eng. Fl. v. p. 54.*

On decayed twigs. Rare.

Pileus $\frac{1}{4}$ - $\frac{3}{4}$ in. broad, convex, rarely quite plane, plicate, reddish-brown, thin, glabrous; gills adnate, yellow, narrow, distant; stem 1 in. high, thin, dark brown, minutely velvety or hairy.—*Grev.* At the base is a small radiated membrane. Scent like that of garlic.

669. Marasmius amadelphus. *Fr.* "Pallid-branch Marasmius."

Inodorous. Pileus between fleshy and membranaceous, obtuse, convex, then plane and depressed, discoid, subpruinose; margin at length striate; stem stuffed, short, pallid, bright brown below, rather mealy; gills broadly adnate, distant, broad, pallid.—*Fr. Epicr. p. 380. Bull. t. 550, f. 3. Ann. N.H. no. 277.*

On dead branches. Rare. Bristol. Bath.

Gregarious, dry. Stem short, about $\frac{1}{2}$ in. long, scarcely 1 lin. thick, somewhat mealy, pallid. Pileus 3-4 lin. broad, always obtuse, at length with the darker disc depressed, pinkish-tawny, becoming pallid, sometimes nearly white.

670. Marasmius ramealis. *Fr.* "Twig Marasmius."

Inodorous. Pileus somewhat fleshy, plane or depressed, obtuse, without striæ, rugulose, opaque; stem stuffed, short, mealy, white, rufous below; gills adnate, rather distant, narrow, white. —*Fr. Epicr. p. 381. Bull. t. 336. Mich. t. 74, f. 7. Eng. Fl. v. p. 52. Berk. exs. no. 10.*

On dry dead branches. Common. [United States.]

Gregarious. Pileus 3-4 lines broad, plano-convex, at length wrinkled and depressed, pale rufescent, the centre darker, under a lens clothed with minute matted silkiness. Gills distant, adnate, sometimes broad behind, whitish or subrufescent. Margin denticulate. Stem $\frac{1}{2}$ - $\frac{3}{4}$ in. high, $\frac{1}{2}$ line thick, curved, fibrillose, with furfuraceous scales, the base minutely dilated, whitish or subrufescent.—*M. J. B.*

Sect. 2. *Mycena*.**671. Marasmius alliaceus.** *Fr.* "Onion-scented Marasmius."

Strong-scented. Pileus submembranaceous, campanulate, then expanded, subumbonate, at first even, then sulcate, growing pale; stem horny, tall, rigid, velvety or pruinose, black; base rooting, naked; gills free, brownish white.—*Fr. Epicr. p.* 383. *Jacq. Aus. t.* 82. *Fl. Dan. t.* 1251. *Mich. t.* 78, *f.* 4. *Paul. t.* 122, *f.* 1. *Eng. Fl. v. p.* 55.

In woods. Rare.

[Low. & Mid. Carolina.]

Garlic-scented. Pileus 1 in. or more broad, at length plane, subumbonate, even, or obsoletely striate, becoming pallid. Stem long, attenuated upwards, rigid, rather horny, incurved at the base and rooting.—*Fries.* Root crooked, thick, knotty, sunk about an inch into the earth, and always attached to rotten wood.—*With.*

672. Marasmius caulicinalis. *Fr.* "Mealy-stemmed Marasmius."

Pileus membranaceous, campanulato-convex, obtuse, smooth, even, then striato-sulcate; stem fistulose, flocculose, bay, attenuated above and paler, farinose; gills adnato-decurrent, connected by veins, yellow.—*Fr. Epicr. p.* 383. *B. & Br. Ann. N.H.* (1866) no. 1136. *Eng. Fl. v. p.* 54?

On the ground, amongst leaves. Nov. Ascot.

Pileus smooth, white tinged with ochre, at length sulcato-striate.

673. Marasmius rotula. *Fr.* "Collared Marasmius."

Pileus membranaceous, slightly convex, umbilicate, plicate; stem horny, fistulose, shining, quite smooth, blackish; gills few, broad, distant, attached to a free collar behind, pallid, white.—*Fr. Epicr. p.* 385. *Sow. t.* 95. *Bull. t.* 64, 569, *f.* 3. *Fl. Dan. t.* 1134. *Mich. t.* 74, *f.* 5. *Berk. Outl. t.* 14, *f.* 7. *Eng. Fl. v. p.* 53. *Cooke exs. no.* 302. *Berk. exs. no.* 62.

On fallen twigs, &c. Common.

[United States.]

Pileus 1-3 lines broad, hemispherical, umbilicate and minutely umbonate, plaited, smooth; margin crenate, white, or pale buff, with a dark umbilicus. Gills broad, distant, equal, or occasionally with a few short ones, colour of the pileus, connate behind, and separating from the stem, so as to present the appearance of being fixed to a free collar surrounding the stem. Stem setiform, slightly flexuous, white above, then tawny, deep shining brown at the base, striate, fistulose, frequently branched and sarmentose, with or without abortive pilei,—*M. J. B.*

674. Marasmius graminum. *B. & Br.* "Grass Marasmius."

Pileus nearly plane, umbonate, sulcate, very pale rufous, the furrows paler, umbo brown; stem quite smooth, shining, black, white above; gills few, sub-ventricose, cream-coloured, attached to a free collar.—*Berk. Outl. t. 14, f. 8. Agaricus graminum, Lib. Ex. no. 119.*

On leaves of grass. Aug. [Low. Carolina.]

Scarcely exceeding 3 lines in breadth. Gills even, with veiny interstices.

675. Marasmius androsaceus. *Fr.* "Black-stemmed Marasmius."

Pileus membranaceous, slightly convex, sub-umbilicate, striate, smooth; stem horny, fistulose, quite smooth, black; gills adnate, distinct, simple, whitish.—*Fr. Epicr. p. 385. Fl. Dan. t. 1551, f. 1. Bolt. t. 32. Sow. t. 94. Bull. t. 569, f. 2. Bocc. t. 104. Eng. Fl. v. p. 53. Berk. exs. no. 131.*

On leaves, &c., in woods. Common. [United States.]

Pileus 3-6 lines broad, convex, with a slight depression, pale rufescent, darker in the centre, grooved and notched, under a lens clothed with a minute matted silkiness. Gills adnate, sometimes quite simple (about 15), with shorter ones between, and no rugæ, occasionally forked, with wrinkles in the interstices. Stem 1-2 in. high, filiform, quite smooth, shining-black, twisted when dry, often branched, and sarmentose at the base.—*M. J. B.*

676. Marasmius perforans. *Fr.* "Fir-leaf Marasmius."

Fœtid. Pileus sub-membranaceous, becoming nearly plane, without striæ, rugulose, smooth; stem fistulose, equal, velvety, dark-bay, inserted at the base; gills adnate, simple, whitish, frequently dimidiate.—*Fr. Epicr. p. 385. Hoff. t. 4, f. 2. Schæff. t. 239. Batsch. f. 10.*

On fir leaves. Scotland. [United States.]

Stem tough, about an inch high, equal, velvety, bay, then black. Pileus 4 lin. broad, rarely depressed, not umbilicate, without striæ, at length rugulose, whitish, then pale reddish. Gills numerous, simple, unequal.

677. Marasmius insititius. *Fr.* "Horny-stemmed Marasmius."

Inodorous. Pileus membranaceous, tough, convexo-plane, sub-umbilicate, unpolished, at length plicato-sulcate; stem horny, fistulose, floccose or mealy, reddish-brown, attenuated downwards to the simple inserted base; gills broadly adnate,

attenuated in front, distant, simple, unequal, pallid, white.—*Fr. Epicr. p.* 386. *Berk. Outl. t.* 14, *f.* 6. *Ag. calopus, Ann. N.H. no.* 266.

On leaves, decayed grass, &c. [Up. Carolina.]

Gregarious, dry, scentless. Stem scarcely an inch long. Pileus unpolished, $\frac{1}{2}$ in. broad, even when young, then plicato-sulcate, white. With the habit of *M. Vaillantii*.

678. Marasmius Hudsoni. *Fr.* "Hudson's Marasmius."

Inodorous. Pileus membranaceous, hemispherical, rugulose; stem horny, filiform, dark purple, beset—as well as the pileus—with scattered purple hairs; gills adnexed, narrow, simple, white, alternately dimidiate.—*Fr. Epicr. p.* 386. *Sow. t.* 164. *Desm. exs. no.* 669. *Eng. Fl. v. p.* 55. *Ann. N.H. no.* 708, *t.* xv. *f.* 3. *A. pilosus, Hud. Fl. Ang.*

On fallen holly leaves. Winter.

Pileus 3 lines broad, convex, almost hemispherical, white, clothed with red, erect, subrigid hairs. Gills dirty white. Stem 1-2 in. high, filiform, whitish, red-brown, or reddish, somewhat hairy at the base.—*Hudson.*

The whole of the outer surface of the pileus is clothed with echinulate processes, and the spores are fusiform, .0004 in. long, with a central nucleus.—*B. & Br.*

679. Marasmius epiphyllus. *Fr.* "Leaf Marasmius."

Pileus membranaceous, nearly plane, at length umbilicate, smooth, plicato-rugose; stem rather horny, fistulose, finely velvety; bright brown below, inserted; gills adnate, few, distant, entire, veined, white.—*Fr. Epicr. p.* 386. *Trat. Aus. f.* 22. *Fl. Dan. t.* 1194, *f.* 1. *Sow. t.* 93. *Batt. t.* 28, *f.* D. *Batsch. f.* 84. *Pers. Ic. & Desc. t.* 9, *f.* 7, 8. *Eng. Fl. v. p.* 55. *Berk. exs. no.* 11.

On fallen leaves, twigs, &c. Common. [United States.]

Pileus 3 lines broad, plane, at length umbilicate, cream-coloured, rugose; gills veiny, branched, adnate, broad at the base; in large specimens they are seen to form a close collar round the stem, which is evident when the gills are almost obsolete; margin of the collar cream coloured; stem 1-2 in. high, filiform, brown or blackish below, paler upwards, minutely velvety.—*M. J. B.*

680. Marasmius saccharinus. *Fr.* "Granular Marasmius."

Pileus membranaceous, convex, sub-papillate, smooth, sulcate and plicate; stem very thin, flocculose, becoming smooth, inserted

obliquely, reddish; gills broadly adnate, narrow, thick, very distant, connected by veins, whitish.—*Fr. Epicr. p. 386. Batsch. f. 83.*

On dead twigs. Rare. King's Cliffe.

Differs from *M. epiphyllus* in the pileus being at first papillate, and the stem flocculose, then smooth; the gills united in a reticulated manner.

Sect. 3. Stemless.

681. Marasmius spodoleucus. *B. & Br.* "Stemless Marasmius."

Conchiform, resupinate, margin at length free, cinereous above, pulverulent or slightly furfuraceous; stem wanting; gills few, white; interstices even.—*B. & Br. Ann. N.H., May, 1859. Berk. Outl. p. 224. Ann. N.H. no. 803.*

On dead elm twigs. Batheaston.

About 2 lines across, resupinate, altogether stemless, conchiform; margin free, arched, above cinereous, pulverulent, or slightly furfuraceous. Hymenium white, very even. Gills few, narrow, entire, so short as to leave a naked space at the base.—*B. & Br.* Spores very small, 0.0008×0.0006 in.

Gen. 14. LENTINUS, Fr. Ep. 45.



Fig. 56.

Spores white; pileus fleshy, coriaceous, tough, hard, and dry; stem hard and often obsolete, when present continuous, and the same with the hymenophore; gills tough, simple, unequal, thin, edge acute, generally toothed; trama none.

HAB. On stumps, rarely on the ground. (*Fig. 56.*)

A natural but very polymorphic genus, distinguished by its tough and fleshy substance.

682. Lentinus tigrinus. *Fr.* "Tiger-spot Lentinus."

Pileus fleshy-coriaceous, thin, orbicular, umbilicate, whitish, clothed with innate black scales; stem thin, without striæ, squamulose, with a decided veil; gills attenuated, decurrent, very narrow, white then yellowish.—*Fr. Epicr. p. 389. Bull. t. 70. Sow. t. 68. Batt. t. 12, f. B.D. Eng. Fl. v. p. 69. Vent. t. 45, f. 6, 7.*

On old stumps. Rare.

[S. Carolina.]

Pileus 2 in. broad, thin, margin at length split; stem 1-2 in. long, dirty-white.—*Fries*. When fresh very tender and easily lacerated, when dry coriaceous, and the stem of a very firm and solid texture.—*Sow*. Spores $\cdot 00013 \times \cdot 00026$ in.
(*Fig. 56, reduced.*)

683. *Lentinus Dunalii*. Fr. "Dunal's Lentinus."

Pileus fleshy-coriaceous, thin, umbilicate, irregular, pallid; clothed with adpressed spot-like scales; stem short, somewhat silky; gills decurrent, crowded, pallid.—*Fr. Epicr. p. 390. Bull. t. 36. Batt. t. 12, A. Berk. Outl. t. 15, f. 2. Eng. Fl. v. p. 68.*

On ash trees. Rare.

Cæspitose. Pileus 2 in. broad, more or less unequal, carnosocoriaceous, umbilicate; margin deflexed, sometimes variously split and sinuated, yellow-white, with brownish rather close scales; margin nearly smooth; gills dichotomous, crenate, sinuated, subdecurrent; stem 1 in. high, 3 lines thick, tough, the lower part clothed with dark, nearly square, adpressed scales, the upper half not scaly, white, resembling the under side of white kid leather. Odour sub-acid, farinaceous.—*M. J. B.*

684. *Lentinus lepideus*. Fr. "Scaly Lentinus."

Pileus fleshy, compact, tough, convex, then depressed, unequal, pallid-ochraceous, broken up into darker spot-like scales; stem stout, rooting, tomentose or scaly; gills sinuate, decurrent, broad, torn, transversely striate, whitish.—*Fr. Epicr. p. 390. Schæff. t. 29, 30. Buxb. iv. t. 25. Sow. t. 382. Eng. Fl. v. p. 69.*

On stumps of firs. Rare.

[United States.]

Pileus 2-4 in. broad, convex or depressed, central or lateral; stem short, hard, very tender when fresh; monstrous forms occur in dark situations, with or without a pileus.—*M. J. B.* Spores $\cdot 0004 \times \cdot 00023$ in.

685. *Lentinus adhærens*. Fr. "Pine-wood Lentinus."

Pileus somewhat fleshy, tough, irregular, lacunose, subpulverulent, dingy, pallid, glutinous, laccate, as well as the nearly hollow-rooting stem; gills decurrent, forming lines on the stem, very thin, torn, white.—*Fr. Epicr. p. 391. With. iv. p. 160.*

In pine-woods. Doubtful.

Small, unequal, taste at length astringent. Pileus convex, then somewhat umbonate, at length depressed and infundibuliform.

686. *Lentinus cochleatus*. Fr. "Shell Lentinus."

Annual, tough, flaccid. Pileus fleshy, but tough, irregular, somewhat lobed or contorted, rufescent, as well as the solid, firm,

sulcate, smooth stem ; gills crowded, serrated, pinkish-white.—*Fr. Epicr. p. 394. Sow. t. 168. Berk. Outl. t. 19, f. 4. Eng. Fl. v. p. 69. Price, f. 125.*

On trunks and the ground. Rare. [United States.]

Very much tufted ; several stems confluent, surface rough with prominent minute ribs or prickles, pale rufescent, often powdered with the white spores, 1-1½ in. broad. Sometimes the surface is more even, but still somewhat sculptured, so as to be rough with raised lines. Stem compound, strongly ribbed and sulcate, the ribs being continuations of the serrated paler decurrent gills. At first the pileus and gills are tender ; stem firm and leathery. Odour agreeable.—*M. J. B.* Spores almost globular, diameter '00015 in.

687. *Lentinus vulpinus.* Fr. "Strong-scented Lentinus."

Sessile, imbricated. Pileus fleshy, but tough, conchate, connate behind, longitudinally rough, costate, corrugate or floccose, tan-coloured ; margin incurved, entire ; gills torn, white.—*Fr. Epicr. p. 395. Sow. t. 361. Eng. Fl. v. p. 72. Krombh. t. 3, f. 16.*

On stumps. Rare. [Cincinnati, U. S.]

Pileus 1-2 in. long, ascending, obovato-spathulate ; margin involute, fleshy, tough, the outer surface cartilaginous, longitudinally lacunose and echinulate, reddish-buff, hoary with the round white spores, and within the flesh is a line of the same substance parallel with the surface ; gills pale, more or less notched and sinuate, broad, not forked. Stem obsolete. Smell very strong and overpowering, somewhat resembling that of field mint.—*M. J. B.* Spores almost globular, very small, '00006 in. diameter.

688. *Lentinus fimbriatus.* Curr. "Fringed Lentinus."

Pileus subdimidiate, subcoriaceous, depressed, fawn coloured, covered with darker floccose scales ; margin slightly involute ; stem lateral, squamulose ; gills serrated and torn, descending (not decurrent), pale brown.—*Linn. Trans. xxiv. p. 152. t. 25. f. 2.*

On a stump standing in a pond. Lewes. Sept., 1862.

Pileus subdimidiate, subcoriaceous, thin (not fleshy) depressed, sometimes very much so, and almost cyathiform, ½ to 1 in. wide, fawn coloured, covered with floccose scales of a darker brown ; margin slightly involute, almost strigose ; stem lateral, from ⅓ to ¼ in. long, rough with somewhat reflexed scales of the same colour as the gills, or rather paler ; gills pale brown, irregularly serrate and lacerated at the margin, descending, but not decurrent. In young specimens a delicate white fimbriate collar or fringe (the remains of the ruptured veil) separates the gills from the stem. Pilei 2 or 3 together, one above another in an imbricated manner. Some of the pilei tinged here and there with pink stains.

689. *Lentinus flabelliformis.* Fr. "Fan-like Lentinus."

Subsessile. Pileus thin, tough, kidney-shaped, plane, smooth, fawn coloured ; margin crenato-fimbriate ; gills broad, torn, pallid.—*Fr. Epicr. p. 395. Bolt. t. 157. Eng. Fl. v. p. 72.*

On stumps. Doubtful.

Inserted on the faith of Bolton's figure, which "may be only *Agaricus salignus*." Pileus 2-3 in. broad; gills rather broad.

Gen. 15.

PANUS, Fr. *Epicr.* p. 396.



Fig. 57.

Spores white; pileus unequal-sided or lateral, tough, fleshy, at length coriaceous, but not woody, drying up, but reviving with moisture; stem the same with the hymenophore; gills thinner than in the last genus, tough, at length coriaceous, unequal, with an entire acute edge; trama floccose.

HAB. On stumps. (*Fig.* 57.)

All the species are tough (at first softer), never woody, drying up in decay.

690. Panus torulosus. Fr. "Twisted Panus."

Pileus fleshy, then tough, coriaceous, plane, then infundibuliform or dimidiate, even, flesh-coloured or ochraceous; stem short, oblique, clothed with grey down; gills decurrent, rather distant, distinct behind, ruddy, then tan-coloured.—Fr. *Epicr.* p. 397. *Batsch.f.* 33. *Paul.t.* 26, f. 3, 4. *Nees.f.* 176. *Krombh.t.* 42, f. 3-5. *Bolt.t.* 146.

On old stumps.

[Mid. & Up. Carolina].

Stem solid, seldom exceeding an in. long, grey, covered with a violaceous down. Pileus entire, 2-3 in. broad, smooth. Flesh pale. Variable in colour, sometimes shaded very slightly, if at all, with pink. Spores $\cdot 0002 \times \cdot 00013$ in. (*Fig.* 57, reduced.)

691. Panus conchatus. Fr. "Shell Panus."

Pileus fleshy, tough, thin, unequal, excentric and dimidiate, cinnamon, becoming pale, at length squamulose; stem short, unequal, pubescent at the base; gills forming decurring lines on the stem, somewhat branched, whitish, flesh-coloured, then ochraceous.—Fr. *Epicr.* p. 398. *Krombh.t.* 42, f. 1-2. *Schæff.t.* 43, 44. *Bull.t.* 298, 517, f. O.P. *Eng.Fl.v.* p. 71. *Ann.N.H.* no. 67.

On trunks. Rare. Margate. Apethorpe. [Cincinnati, U. S.]

Pileus flaccid, even; gills not anastomosing at the base, rather thick and close; stem not 1 in. high, sometimes obsolete.—*Fries*.

Always known by its conchate form and tougher substance from similar species of the genus *Agaricus*.—*M. J. B.*

692. Panus stypticus. Fr. "Styptic Panus."

Pileus coriaceous, reniform, cinnamon, growing pale, cuticle breaking up into mealy scales; stem lateral, short, dilated above; gills determinate, thin, crowded, connected by veins, cinnamon.—*Fr. Epicr. p.* 399. *Bull. t.* 140, 557, *f.* 1. *Schæff. t.* 208. *Sow. t.* 109. *Fl. Dan. t.* 832, *f.* 1. *t.* 1292, *f.* 1. *Tratt. Aus. t.* 2. *Krombh. t.* 44, *f.* 13-17. *Buxb. v. t.* 10, *f.* 1. *Eng. Fl. v. p.* 73. *Smith. P.M. f.* 6. *Berk. exs. no.* 136.

On stumps, dead trees, &c. Common. [S. Carolina.]

Gregarious or caespitose. Pileus 1-1½ in. broad, semiorbicular, the margin entire or lobed, surface nearly even, pruinose or furfuraceous, often zoned, varying in depth of colour; margin involute; gills often branched, beautifully connected by veins, pale cinnamon. Stem about ¼ in. high, ascending, dilated above, pruinose.—*M. J. B.* Spores '0001 × '00018 in.

Gen. 16.

XEROTUS, Fr. Ep. p. 48.

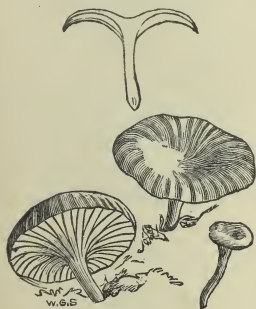


Fig. 58.

Spores white; pileus membranaceous; stem confluent with the hymenophore, which descends into and forms a trama; gills dichotomous, fold-like, coriaceous, adnato-decurrent, with an obtuse entire edge; in the single British species branched and very distant. (*Fig. 58.*)

HAB. The British plant grows in peat-mosses.

This genus, which is chiefly tropical, resembles a coriaceo-membranaceous *Cantharellus*, with narrow gills.

693. Xerotus degener. Fr. "Moss Xerotus."

Pallid. Pileus between coriaceous and membranaceous, plano-depressed, flocculose, hygrophanous, striate when moist; stem solid, thin, velvety; gills plicate, branched, distant, pallid.—*Fr. Epicr. p.* 400. *Schæff. t.* 243. *Sow. t.* 210.

In peat mosses. Very rare.

Pileus somewhat zoned, grey, thin, but tough.

(*Fig. 58.*)

Gen. 16.

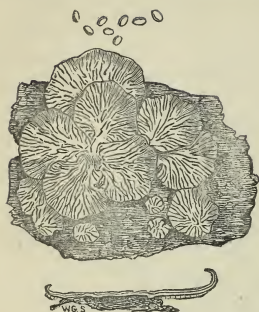
TROGIA, Fr. Mon. Hym.

Fig. 59.

Pileus submembranaceous, soft, tough, flaccid, but very dry, flexible, reviving; gills venose, fold-like, forked, edge longitudinally channelled or crisped; texture fibrillose; spores white. (Fig. 59.)

In the only British species the edge of the gills is not channelled but obtuse, but it has the habit, form, and texture of *Trogia*, and is referred to that genus without doubt; although the edges of the gills are not channelled they are nevertheless crisped.

694. Trogia crispa. Fr. "Crisped Trogia."

Tough, cup-shaped, reflexed, lobed, villous, reddish-yellow; gills plaited, dichotomous, crisped, whitish or grey.—Fr. *Epicr.* p. 369. *Fl. Dan. t.* 1739. *Pers. Ic. & Desc. t.* 8, f. 7. *Buxb. v. t.* 7, f. 2. *B. & Br. Ann. N.H. no.* 1135.

On twigs of beech, birch, &c. Jedburgh. [United States.]

The colour of the pileus varies from a yellowish brown to white, sessile, lobed, $\frac{1}{2}$ -1 in. broad, finely villous, reddish-yellow behind. Margin whitish. Gills narrow, veinlike, crisped, with the edge obtuse, not chaunnelled. (Fig. 59, nat. size.)

Gen. 17.

SCHIZOPHYLLUM, Fr. Obs. i. p. 103.

Fig. 60.

Spores white; pileus not fleshy, dry, sessile; gills coriaceous, branched, split longitudinally at the edge, with the two divisions revolute or spreading, joined to the pileus by a tomentose pellicle.

HAB. Rotten wood.

An easily recognized but very aberrant genus of *Agaricini*. (Fig. 60.)

695. Schizophyllum commune. Fr. "Common Schizophyllum."

Pileus adnate behind, somewhat extended, simple, and lobed; gills grey, then brownish, purple, villous, edge revolute.—Fr. *Epicr.* p. 403. *Grev. t.* 61. *Krombh. t.* 4, f. 14-16. *Batsch. f.* 126. *Bull. t.* 346, 581, f. 1. *Sow. t.* 183. *Buxb. v. t.* 7, f. 1. *Eng. Fl. v.* p. 130. *Gard. Chron.* 1860, p. 1151.

On dead wood.

[New Orleans, U. S., &c.]

Pileus 1-1½ in. broad, sessile or with a short lateral stem, sometimes resupinate, and supported by a stem-like process arising from the centre of the pileus, white or greyish, zoned, tomentose; margin even or variously lobed and split; gills reddish-brown or whitish, flabelliform, apparently but not truly forked, the inner barren face villous with the flocci, of which the substance of the pileus is composed, the outer surface alone bearing spores. Cosmopolitan.—M. J. B. Spores very small, almost globular, .0001 in. diameter.
(Fig. 60, nat. size.)

Gen. 18.

LENZITES, Fr. Gen. Hymen.

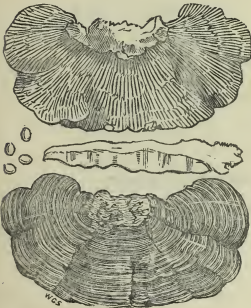


Fig. 61.

Spores white; pileus coriaceous, dimidiate, sessile; gills coriaceous, firm, unequal, simple, or branched, and anastomosing behind, edge obtuse or acute; trama floccose; often spuriously porous.

(Fig. 61.)

HAB. On stumps, rails, etc.

Chiefly tropical, where the species become woody, with us they are only coriaceous. Allied to *Trametes* and *Dædalea*, amongst the *Polyporei*.

696. Lenzites betulina. Fr. "Birch Lenzites."

Pileus between corky and coriaceous, firm, obsoletely zoned, tomentose, pallid; margin of the same colour; gills straight, somewhat branched, anastomosing, pallid.—Fr. *Epicr.* p. 405. *Fl. Dan. t.* 1555. *Sow. t.* 182. *Berk. Outl. t.* 15, f. 3. *Dædalea betulina*, *Eng. Fl. v.* p. 131.

On stumps, &c. Common.

[Cincinnati, U. S.]

Perennial. Pileus 2-4 in. broad, coriaceous, sessile, dimidiate, deeply grooved concentrically, and clothed with dense pubescence or coarse velvety down, greyish or pale, often green with minute *Alga*. Gills straight, tan-coloured, not much branched or anastomosing, their margin at length torn.—M. J. B.
(Fig. 61, reduced.)

697. Lenzites flaccida. *Fr.* "Flaccid Lenzites."

Pileus coriaceous, thin, flaccid, unequal, hairy, zoned, pallid; margin of the same colour; gills broad, crowded, straight, unequal and branched, white, becoming pallid.—*Fr. Epicr. p.* 406. *Bull. t.* 394. *Bolt. t.* 158.

On stumps.

Running by almost imperceptible gradations into *L. betulina*. Pileus thin (scarcely 1 lin. thick), hairy, strigose, at first whitish, then dingy, with zones of the same colour. Gills never anastomosing.

698. Lenzites sepiaria. *Fr.* "Chocolate Lenzites."

Pileus coriaceous, hard, zoned, strigoso-tomentose, rough, bright-brown; margin yellowish; gills rather thick, branched, anastomosing, yellowish.—*Fr. Epicr. p.* 407. *Ann. N.H. no.* 337. *Sow. t.* 418. *Schæff. t.* 76. *Buxb. v. t.* 6. *Vaill. t.* 1, f. 1-3. *Dædalea sepiaria, Eng. Fl. p.* 132.

On fir wood.

[United States.]

Pileus 2-3 in. broad, dimidiate, elongated, often confluent, deeply zoned, strigoso-lacunose, of a rich deep-chocolate; margin paler, sometimes white, substance coriaceous, fibrous, of a fine ochre or rhubarb colour, occasionally entirely resupinate. Hymenium composed of brownish plates, tolerably regular, but here and there slightly branched, or interrupted so as to form pores.—*M. J. B.*

699. Lenzites abietina. *Fr.* "Larch Lenzites."

Pileus coriaceous, thin, effuso-reflexed, clothed with umber down, at length becoming smooth and whitish; gills decurrent, simple, unequal, pruinose or glaucescent, brownish.—*Fr. Epicr. p.* 407. *Bull. t.* 442, f. 2, t. 541, f. 1. *Eng. Fl. v. p.* 132. *Vent. t.* 60, f. 3-5.

On deals. Glasgow.

[United States.]

Perennial. Pileus umber and in age becomes quite smooth, and the gills nearly simple, of a pruinose cinereous hue. Pileus $1\frac{1}{2}$ -4 in. broad.—*M. J. B.* Thinner than *L. sepiaria*.

Order II. POLYPOREI.

Hymenium lining the cavity of tubes or pores, which are sometimes broken up into teeth or concentric plates.—*Fr. Berk. Outl. p. 229.*

Hymenium inferior, lining the cavity of tubes or pores, which are at first sinuous. Pores sometimes broken up into wavy or labyrinthiform, concentric (not radiating) laminæ, or teeth; when young, and the hymenium is sinuous, pores are present in the margin.

Hymenium lining tubes, *regular*—

Trama none.

Tubes separating from the hymenophore and from each other, terrestrial

BOLETUS. 35

Tubes adhering to the hymenophore and to each other, terrestrial. . .

STROBILOMYCES. 1

Trama present.

Trama dissimilar in substance (and often in colour) from the hymenophore, generally epiphytal . . .

POLYPORUS. 83

Trama the same in substance and colour with the hymenophore, epiphytal

TRAMETES. 4

Hymenium lining tubes, *irregular*—

Tubes forming deep labyrinthiform depressions—plant woody

DÆDALEA. 21

Tubes incomplete, reduced to shallow sinuous folds; plant waxy

MERULIUS. 11

Hymenium at first papillose, papillæ at length elongating and forming tubes—

Plant submembranaceous and resupinate . . .

POROTHELIUM. 1

Plant fleshy

FISTULINA. 1

Gen. 18.

BOLETUS, Fr.

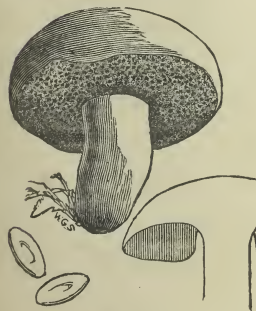


Fig. 62.

Hymenium quite distinct from the smooth hymenophore; trama none, the tubes easily separating from the hymenophore, and from each other; fleshy, putrescent, terrestrial fungi, having central stems.

(Fig. 62.)

A clearly defined genus, with many handsome species, including some that are poisonous, and many that are esculent.

A. Ochrospori—spores ochraceous.*Sect. 1. Viscipellis.***700. Boletus luteus. L.** “Brown-yellow Boletus.”

Pileus gibbous, then pulvinate, smeared with brown evanescent gluten; stem equal, firm, whitish, above the ring punctato-scabrous; ring ample, membranaceous, white or brownish; tubes adnate, minute, simple, yellow.—*Fr. Epicr. p.* 409. *Schæff. t.* 114. *Lenz. f.* 30. *Fl. Dan. t.* 1135. *Krombh. t.* 33, *f.* 1-12. *Buxb. v. t.* 14. *Eng. Fl. v. p.* 147. *Price, f.* 1, 29. *Fl. Boruss, t.* 377.

In fir woods. Common.

[S. Carolina.]

Pileus 3-4 in. broad, dingy yellow, convex, covered at first with thick brown gluten, which is soon washed off, but the pileus remains slightly viscid and clothed with very minute matted silkiness. Flesh at first firm, whitish, not changing. Tubes adnate, dull yellow, nearly simple, their orifices round, or slightly waved. Spores ochraceous, ferruginous. Stem 4 in. high, or more, $\frac{1}{2}$ in. thick, straight or flexuous, at first white, but soon sordid, hoary beneath the white persistent ring, glandular above, sometimes the whole surface is glandular.—*M. J. B.* Spores spindle-shaped, yellowish-brown, $\cdot 0003 \times \cdot 00013$ in.

701. Boletus elegans. Schum. “Elegant Boletus.”

Pileus convex, then plane, viscid, golden yellow, and slightly ferruginous; stem firm, unequal, golden yellow, then rufous, punctate above the fugacious, white, then yellowish ring; tubes decurrent, minute, simple, golden, or sulphur-yellow.—*Fr. Epicr. p.* 409. *Grev. t.* 183. *Gard. Chron.* (1860), *p.* 529, *fig.* ?. *Price, f.* 110. *Krombh. t.* 34, *f.* 1-10. *Huss. ii. t.* 12.

In mixed woods. May—Oct.

[Low. Carolina.]

From its nearest allies it is distinguished by its brilliant golden yellow or ferruginous tint, its neat form, its firm equal stem, which is at first coloured like the cap, and then acquires a rufous tint, but especially by its being marked with little dots, but not reticulate, above the fugacious ring, which is at first whitish, and then acquires a yellow tinge, and its decurrent, minute, simple, golden yellow pores, inclining to sulphur. The flesh, moreover, is of a decided, though pale yellow.—*M. J. B.*

702. Boletus flavus. With. “Bright-yellow Boletus.”

Firm. Pileus yellow, with a tawny, evanescent gluten; stem yellow, then brownish, apex reticulated with the decurrent tubes; tubes rather large, angular, yellow.—*Fr. Epicr. p.* 410. *Bolt. t.* 169. *Sow. t.* 265. *B. Grevillei, Eng. Fl. v. p.* 148.

In woods. Common.

Fries regards this as a variety of *B. elegans*; it requires to be carefully distinguished from *B. luteus*. Pileus 2-5 in. broad, compact, in moist shady places glutinous and bright-yellow, in exposed situations dry and brown; flesh pale yellow, not changing; tubes unequal, of a golden sulphur, wavy, sometimes with their orifices ruddy. Ring dirty-yellow, membranaceous. Stem 2-3 in. high, 6-9 lines thick, yellow spotted with purple, thickened at the base, reticulated above the ring.—*Klotsch*. Spores spindle-shaped, yellowish-brown, $\cdot 0003 \times \cdot 00016$ in.

703. *Boletus laricinus*. Berk. "Larch Boletus."

Pileus dirty white, with livid stains, covered at first with dirty yellow or brownish evanescent slime, subsquamose; stem cribose above the ring, scrobiculate below, dirty white; tubes adnate, subdecurrent, compound, at first nearly white.—*Berk. Outl. p. 230. Huss. i. t. 25. Eng. Fl. v. p. 148.*

Amongst larch. Sept. Common.

Pileus 2-3 in. broad, dirty white, with livid stains, and sometimes adpressed, dirty yellow fascicles of filaments, the remains of the slimy ring; often deeply scrobiculate, covered with dirty yellow or brownish slime, which gradually disappears. Flesh white, very slightly tinged with yellow, not changeable. Tubes adnate or subdecurrent, compound, each consisting of two or three cells, their orifices angular, at first nearly white, with a tinge of yellow, at length brownish from the spores. Stem 2 in. or more high, $\frac{1}{2}$ - $\frac{3}{4}$ in. thick, nearly equal, reticulated above the ring, and frequently much scrobiculated below, dirty white like the pileus, stained with the spores, somewhat downy at the base. Spores oblong, brownish clay coloured.—*M. J. B.* Spores spindle-shaped, pale brown, $\cdot 00042 \times \cdot 00017$ in.—*W. G. S.*

704. *Boletus granulatus*. L. "Granulated Boletus."

Pileus convex, expanded, yellowish, with a brownish, ferruginous, evanescent gluten; stem without a ring, yellowish, punctato-granulose above; tubes adnate, short, simple, yellow; orifice granulated.—*Fr. Epicr. p. 410. Schæff. t. 123. Barla. t. 31, f. 4-12. Lenz. f. 31. Letell. t. 604. Krombh. t. 34, f. 11-14. Eng. Fl. v. p. 149. Vent. t. 50, f. 3. B. lactifluus, Sow. t. 420.*

In grass, amongst firs. Aug. Sept. Esculent. [Carolina.]

Gregarious, caespitose. Pileus 2 in. or more broad, hemispherical, at first covered with a thick rufous brown slime, afterwards dirty rufous or yellowish; flesh thick, white or yellowish, not changeable; margin at first inflexed and downy. Pores at first whitish, then lemon-coloured, compound, the margin distilling a pale watery milk, which when dried gives them a granulated appearance, at length dirty yellow, adnate. Spores ochraceo-ferruginous; stem 1 in. or more high, $\frac{1}{2}$ in. thick, generally short, but variable, obtuse at the base, rooting, more watery than the pileus, pale yellow above, white below, minutely tomentose and granulated, at first covered with milky drops.—*M. J. B.*—Spores spindle-shaped, yellowish orange, $\cdot 0003 \times \cdot 00013$ in.

A very variable species, but the very glutinous pileus always the same colour, viz., a rich chestnut brown; tubes and stem sulphur colour, tubes exuding a thin gummy juice, which soon dries in the form of sugary granules. Stem rough, scabrous, as if covered with moist sugar.—*W. G. S.*

705. *Boletus bovinus*. L. "Shallow-pored Boletus."

Pileus nearly plane, smooth, viscid, reddish-grey; stem equal, even, self-coloured; tubes subdecurrent, angular, compound, greyish-yellow, then ferruginous.—*Fr. Epicr. p.* 411. *Lenz. f.* 38. *Krombh. t.* 75, *f.* 1-6. *Fl. Dan. t.* 1018. *Huss. i. t.* 34. *Eng. Fl. v. p.* 149. *Fl. Boruss. t.* 378.

Heathy fir woods. Sept.

[United States.]

Gregarious, fasciculate. Pileus 1-2½ in. broad; when young hemispherical, margin white and tomentose, disc and top of the stem purplish, base rhubarb-coloured; when full-grown convex, expanded; margin still turned in, very glutinous, dull orange-yellow, or deep buff; flesh tinged with the colour of the pileus, not changeable. Tubes resembling the pores of *Merulius lachrymans*, very shallow (⅓ of an inch), compound, dirty yellow, not easily separating from the pileus. Stem 2-3 in. high, ½-¾ in. thick, submentose, not diffused gradually but rather abruptly into the pileus, of the same colour, but streaked with watery lines, attenuated below, or subequal; bulbous when very young. Spores elliptic. Smell strong, like *Marasmius oreades*.—*M. J. B.* Spores spindle-shaped, dingy green ochre, '0003 × '00015 in.

706. *Boletus badius*. Fr. "Bay Boletus."

Pileus pulvinate, soft, viscid, bay-tawny; stem solid, nearly equal, even, paler, brownish pruinose; tubes adnate, sinuate or depressed, rather large, angular, dingy, yellowish-white, then greenish.—*Fr. Epicr. p.* 411. *Lenz. f.* 35. *Krombh. t.* 36, *f.* 12-18. *Ann. N.H. no.* 804. *Fl. Boruss. t.* 379.

In pine woods. Rare.

Pileus viscid in wet, shining in dry weather, flesh turning partially blue.

707. *Boletus sanguineus*. With. "Blood-red Boletus."

Pileus convexo-plane, even, smooth, viscid, blood-red; stem equal, even, variegated with yellow and red; tubes adnate, broad, unequal, orange-yellow.—*Fr. Epicr. p.* 412. *Sow. t.* 225. *B. sub-tomentosus*, var. β . *Eng. Fl. v. p.* 150.

In woods. Rare.

Pileus crimson, semiglobular, ¾-1¼ over; when old rich brown, nearly 3 in. over, and the edge turning up. Flesh white, a little tinged with crimson next to the skin, changing slowly to a bluish cast when wounded. Stem blotches or streaks of dilute crimson on a yellow ground, apparently twisted, 1-2½ in. high, near ⅔ in. diameter. In the larger specimens the base is bulbous.—*With.*

708. *Boletus piperatus*. Bull. "Peppery Boletus."

Pileus convexo-plane, smooth, slightly viscid, yellow, inclining to reddish-grey; stem slender, even, fragile, yellow within, and

at the base ; tubes subdecurrent, large, angular, ferruginous.—*Fr. Epicr. p.* 412. *Bull. t.* 451, *f.* 2. *Batsch. f.* 28. *Sow. t.* 34. *Fl. Dan. t.* 1850. *Krombh. t.* 37, *f.* 16-20. *Eng. Fl. v. p.* 150. *Corda. Sturm. t.* 60. *Barla. t.* 32, *f.* 5-10. *Smith, P.M. f.* 26.

In woods. Autumn.

[Carolina, U. S.]

Pileus 1-3 in. broad, at length plane, moist, or even glutinous, reddish-yellow or brownish. Flesh yellow, not changing colour. Tubes large, subdecurrent, angular, reddish-yellow or ferruginous. Stem 1-2 in. high, 3-4 lines thick, more or less deep yellow. Taste remarkably acrid and pungent.—*Grev.* Spores oval, brown, 0003×00015 in.

Sect. 2. *Subtomentosi.*

709. *Boletus rubinus.* *Smith.* "Red-tubed Boletus."

Pileus yellow-brown, gibbous, pulvinate, then plane, dry, subtomentose, slightly cracked ; tubes wholly carmine, subdecurrent, compound, of a medium size ; stem yellow, smeared with crimson, irregular ; flesh vivid-yellow, perfectly unchangeable ; spores pale-umber, ovate.—*Seem. Journ.* 1868, *p.* 33, *t.* 75, *f.* 1-4.

Under trees by the roadside. Sept. Near Dunstable.

It differs from all other British species in the wholly carmine tubes, together with the vivid-yellow, wholly unchangeable flesh. Pileus 2-3 in. broad, stem 2-3 in. high. Spores oval, almost round, pale warm brown, 00025×0002 in.

710. *Boletus parasiticus.* *Bull.* "Parasitic Boletus."

Pileus hemispherical, smooth, viscid, soon cracked and tessellated ; stem thin, incurved, rigid, diffracto-rimose, yellow without and within ; tubes decurrent, middle-sized, rounded, simple, golden-yellow.—*Fr. Epicr. p.* 412. *Bull. t.* 431, *f.* 1. *Berk. Outl. t.* 15, *f.* 4. *Ann. N.H. no.* 338.

On species of *Scleroderma*. Rare. Clifton. Kew. Coombe wood.

Pileus silky, dirty-yellow as well as the incurved, rigid, slightly silky stem ; flesh of a pale-reddish hue ; tubes decurrent, labyrinthiform, reddish. It is certainly not viscid in any stage of growth.—*B. & Br.*

We have met with it several times, but there has not been any reddish tint in the tubes of our specimens. Hence they may vary in colour. Tubes at first sulphur colour, yellow, then reddish-orange. Spores spindle-shaped, elongated, pale brown, very different from the last, 0005×00015 in.

711. *Boletus variegatus.* *Fr.* "Variegated Boletus."

Pileus convexo-plane, obtuse, moist, tawny-yellow, with scattered superficial, fasciculato-pilose scales ; margin acute, at first flocculose ; stem without ring, firm, equal, even ; tubes adnate,

unequal, minute, brownish cinnamon, then pallid.—*Fr. Epicr. p. 413. Lenz. f. 39. Krombh. t. 34, f. 15-18, t. 75, f. 7-14. Schæff. t. 115? Eng. Fl. v. p. 150.*

In pine woods. Aug. Sept. [Mid. Carolina.]

Pileus 3 in. or more broad, convex, fasciculato-squamose; scales small, tawny-yellow; flesh changing to blue when cut; margin tomentose, subinvolute; tubes very narrow, dull-yellow, blue when bruised, adnate, resembling somewhat those of *B. bovinus*; stem 3 in. high, $\frac{3}{4}$ in. thick, granulato-pulverulent, very neat, firm, yellow, obtuse. Smell unpleasant, taste not so.—*M. J. B.* Spores oval, very small, greenish ochre, $\cdot 0001 \times \cdot 00017$ in.

712. Boletus striæpes. *Sec.* "Striate Boletus."

Pileus convex, then plane, soft, silky, olivaceous; cuticle ferruginous within; stem firm, curved, yellow, with blackish-brown striæ; base brownish-rufous; tubes minute, angular, greenish, orifice yellow.—*Fr. Epicr. p. 415. Batt. t. 29 c.*

In woods. Rare. Coed Coch.

Stem dirty-yellow, dotted under a lens with broad bay lines. Flesh white, red near the cuticle, sparingly changing to blue.—*M. J. B.*

713. Boletus chrysenteron. *Fr.* "Red-cracked Boletus."

Pileus convexo-plane, soft, floccoso-squamose, brownish, inclining to brick-red; flesh yellow, red beneath the cuticle; stem nearly equal, rigid, fibroso-striate, scarlet or yellow; tubes subadnate, rather large, angular, unequal, greenish-yellow.—*Fr. Epicr. p. 415. Bull. t. 490, f. 3. Krombh. t. 76. Ann. N.H. no. 339. Corda. Sturm. t. 1. Batt. t. 30. E. Huss. i. t. 5. B. subtomentosus, Eng. Fl. v. p. 150, in part.*

In meadows, woods, &c. Common. [Mid. and Up. Carolina.]

When the pileus is cracked, the cracks are red. Pileus 2-3 in. or more broad, variable, of some shade of red, olive, or yellow, pulvinate, minutely downy; cuticle often cracked, interstices reddish; flesh white or yellowish, changing slightly to blue; stem 3 in. high, $\frac{1}{4}$ - $\frac{1}{2}$ in. thick, yellowish, more or less streaked with red, often crooked. Spores spindle-shaped, pale warm brown, $\cdot 0005 \times \cdot 00017$ in.

714. Boletus subtomentosus. *L.* "Yellow-cracked Boletus."

Pileus pulvinate, expanded, soft, dry, villosa-tomentose, somewhat olive, not discoloured under the cuticle; stem stout, unequal, sulcate and ribbed, rough, punctate, yellow; tubes adnate, broad, angular, of the same colour.—*Fr. Epicr. p. 415. Nees. f. 206. Lenz. f. 36, 37. Schæff. t. 112. Krombh. t. 37, f. 8-11, t. 48, f. 1-6. Fl. Dan. t. 1074. Price, f. 2. Batt. t. 30. F. Eng. Fl. v. p. 150, in part.*

In woods.

[United States.]

When the pileus is cracked, the cracks are yellow. Size and habit very much resembling *B. chrysenteron*, but less common. Often growing on beech nuts. Spores oval, yellowish brown, $\cdot0005 \times \cdot00021$ in.

var. radicans. *Krombh. t. 48, f. 1-6.* Whole plant pale ochre or stone colour. Spores spindle-shaped, very pale ochre, almost white, $\cdot00026 \times \cdot00012$ in., has the appearance of being distinct. Epping Forest. Staplehurst, &c.—*W. G. S.*

715. *Boletus variegator.* B. & Br. "Varicolored Boletus."

Pileus convex, subtomentose, olive, margin involute, flesh under the cuticle dark-purple, stem bulbous, attenuated upwards, reticulated at the apex, yellowish below, rufescent above and finely pubescent; tubes minute, free, yellow.—*Ann. N.H. 1865, no. 1020, t. xiii, f. 3.*

In woods, &c. Aug. Deeside.

The flesh of the pileus and stem is pale, here and there inclining to yellow, and partially marbled. It approaches *B. subtomentosus* in habit, but with the bulbous reticulated stem of the section *Calopodes* of Fries.

Sect. 3. Calopodes.

716. *Boletus calopus.* Fr. "Scarlet-stemmed Boletus."

Pileus globose, then pulvinate, unpolished, somewhat tomentose, olivaceous; stem firm, conical, then nearly equal, reticulated entirely, or at the apex, scarlet; tubes adnate, minute, angular, yellow.—*Fr. Epicr. p. 416. Krombh. t. 37, f. 1-7. Schæff. t. 315. Bolt. t. 84. Eng. Fl. v. p. 151. Saund. & Smith, t. 13.*

In mixed woods. Aug. King's Cliffe. Epping Forest.
[Mid. Carolina.]

Differs from *B. subtomentosus* in the red, thicker, reticulated stem and narrower tubes. Flesh more or less changing to blue.—*Fries.* Spores spindle-shaped, yellowish brown, $\cdot0003 \times \cdot00014$ in.

717. *Boletus olivaceus.* Schæff. "Olive Boletus."

Pileus convex, even, at length smooth, olive-brown, margin at first inflexed, stem firm, clavato-bulbous, reticulate, punctate, blood-red, yellowish above; tubes adnate, short, minute, unequal, olive-yellow.—*Fr. Epicr. p. 416. Schæff. t. 105. B. pachypus, var. b. Eng. Fl. v. p. 151. Purt. no. 988.*

In woods. Rare. Oct.

Pileus olive brown ; tubes bright yellow ; stem brown below, yellow above.
—*Purt.* Pileus from $1\frac{1}{2}$ -2 in. in diameter, seldom more ; stem rather short.

718. *Boletus pachypus.* Fr. "Thick-stemmed Boletus."

Pileus pulvinate, dry, submentose, brownish, then pallid tan ; stem thick, firm, reticulated, variegated yellow and red ; tubes somewhat elongated, shortened near the stem, almost free, rounded, yellow ; orifice of the same colour.—*Fr. Epicr. p.* 417. *Letell. Supp. t.* 641. *Kromb. t.* 35. *f.* 13-15. *Eng. Fl. v. p.* 151. *Saund. & Sm. t.* 17.

In woods. July—Sept. Epping Forest. [Low. Carolina.]

Pileus 6-7 in. broad, dry, pulvinate, submentose, pale reddish brown, very thick and fleshy, when young firm, when full grown very soft ; flesh white, not changeable ; tubes free, at first lemon-coloured, afterwards dirty yellow, simple ; stem 3-4 in. high, $2\frac{1}{2}$ in. thick, bulbous, often swollen from the top, rarely equal, reticulated, yellowish when young, subrufescent when old, sometimes two or three springing from the same root.—*M. J. B.* This species sometimes changes very sparingly to blue. Taste not unpleasant. Spores large, oval, yellowish ochre, 0005×00022 in.

Sect. 4. Edules.

719. *Boletus edulis.* Bull. "Edible Boletus."

Pileus pulvinate, smooth, moist, brownish ; stem stout, reticulated, pallid brown ; tubes nearly free, elongated, minute, at first white, then yellow and greenish.—*Fr. Epicr. p.* 420. *Bull. t.* 60, 494. *Sow. t.* 111. *Sv. Bot. t.* 197. *Lenz. f.* 34. *Tratt. aus. f.* 34. *Krombh. t.* 31. *Vitt. t.* 22. *Letell. S. t.* 614. *Schæff. t.* 134, 135. *Paul. t.* 167, 168. *Berk. Outl. t.* 15. *f.* 6. *Huss. i. t.* 81. *Cooke, B.F. t.* 15. *Smith, E.M. f.* 2. *Eng. Fl. v. p.* 153. *Badh. i. t.* 3, ii. *t.* 3, *f.* 1, 2. *Price, f.* 63. *Barla. t.* 311. *Vent. t.* 8. *Hogg. & Johnst. t.* 11.

In woods. Common. Esculent. [Mid. Carolina.]

Pileus 6 in. or more broad, pulvinate, at length convexo-expanded, smooth, shining, often rugose, and much cracked, dark amber, pale towards the margin, slightly viscid, extreme margin white, scarcely downy. Flesh turning a little reddish near the epidermis. Tubes nearly free, at first white, then lemon-coloured, at length dull yellow, simple, their orifices angular. Spores large, greenish ochre. Stem 4 in. high or more, 2 in. thick, fawn coloured, incrassated above and below, reticulated.—*M. J. B.*

var. β. elephantinus, changes to blue when cut or bruised. Banstead Downs, Surrey.—*Schæff. t.* 277.

720. Boletus fragrans. Vitt. "Fragrant Boletus."

Pileus pulvinate, repand, sub-tomentose, umber-brown; margin inflexed; stem stout, even, variegated with red and yellow; tubes semi-free, minute, round, greenish-yellow.—*Fr. Epicr. p. 421. Vitt. F. Mang. t. 19. Smith. Seem. Journ. 1868, p. 33. B. xanthophorus, Krombh. t. 75, f. 15-21.*

In woods, under oaks, &c. Sept. Oct. Esculent.

The pileus is bronze-brown, pulvinate, and scabrous; tubes minute, and of a beautiful shade of subdued yellow-green; the stem, which is thickened downwards, is brown and also scabrous, and the flesh is pure white, which changes here and there to the slightest imaginable shade of cobalt on being cut or broken; the spores are pale yellowish-green, ovate, with an apiculus at one end, $\cdot 00045$ in. long, $\cdot 00017$ in. broad.—*W. G. S.*

721. Boletus impolitus. Fr. "Unpolished Boletus."

Pileus pulvinate, dilated, flocculose, dingy, pallid, at length granulose or cracked; margin obtuse; stem short, stout, compact, even, pallid; tubes nearly free, very long, rather large, yellowish.—*Fr. Epicr. p. 421. Krombh. t. 74, f. 8, 9. Schæff. t. 108. Letell. t. 614.*

On woodsides. Esculent.

Attains a diameter of four or more inches. Stem about 2 in. Flesh more or less changing to blue when cut. Often very large. Spores oval, or spindle-shaped, pale greenish brown, $\cdot 0005 \times \cdot 00022$ in.

722. Boletus æstivalis. Fr. "Early Boletus."

Pileus pulvinate, silky, soft, then rivulose, minutely granulated and silky, opaque, pallid tan; stem stout, firm, sub-conical, even, pallid, white; tubes elongated, minute, equal, of the same colour.—*Fr. Epicr. p. 422. Paul. t. 170. Huss. ii. 25. Hogg & Johnst. t. 13.*

In woodland pastures. Esculent.

One of the largest of the genus, sometimes 6-8 in. in diameter; stem 2 in. thick. Pileus pale tan or grey silky, granulated when old, cracking into somewhat hexagonal or irregular patches. Flesh not turning blue. Spores elongated oval, greenish-brown, rather dark, $\cdot 00048 \times \cdot 00018$ in.

*Sect. 5. Luridi.***723. Boletus Satanus. Lenz.** "Satanic Boletus."

Pileus pulvinate, smooth, somewhat viscid, brownish tan colour, then whitish, stem blunt, ovato-ventricose, reticulated above, blood red; tubes free, minute, yellow; orifice from the

first blood red.—*Fr. Epicr. p. 417. Lenz. f. 33. Roq. t. 6. Krombh. t. 38. f. 1-6. Huss. i. t. 7. Ann. N.H. no. 340. Smith. P.M. f. 27.*

In woods. Poisonous.

[Mid. Carolina.]

Pileus sometimes 8 in. across, commonly less, pulvinate, soft to the touch, naked, dry, smooth, whitish, leather-buff or greenish, often shading into a red tinge; flesh solid, becoming soft, tender, and juicy, white, turning reddish, then blue; stem 2-3 in. high, thick, finely reticulated above, the reticulations purple-crimson, often vanishing in age, the stem growing streaked below. Spores rich brown, oval, or spindle-shaped, 00047×00022 in.

724. Boletus luridus. *Fr.* "Lurid Boletus."

Pileus pulvinate, tomentose, olive-umber, then subviscid, dingy; stem stout, vermilion-red, reticulated, or punctate, with darker markings; tubes free, rounded, yellow, then greenish; orifice from vermilion to orange.—*Fr. Epicr. p. 418. Schæff. t. 107. Tratt. Aust. f. 17. Grev. t. 121. Letell. f. 32. Krombh. t. 38. f. 11-17. Bull. t. 100. Bolt. t. 85. var. Berk. Outl. t. 15. f. 5. Eng. Fl. v. p. 152. Gard. Chron. (1860) p. 385. Harz. t. 56. Badh. t. 7. f. 12. ii. t. 6. f. 3-5. Smith P.M. f. 10. Barla, t. 33. f. 1-5.*

In woods and woodland pastures. Common. Poisonous.

[Mid. Carolina.]

Pileus 2-6 in. broad, convex, expanded, minutely tomentose, olive, brick-red, pinkish, cream-coloured, or ferruginous brown; flesh more or less yellow, changing to blue. Tubes free, yellow or greenish, their orifices of a beautiful red or bright orange, quite simple, round. Spores olivaceous-ochre. Stem variable in length, bulbous, tomentose, sometimes quite smooth, red, with ferruginous or the brightest yellow shades, solid, generally more or less marked or reticulated with crimson-red.—*M. J. B.* Spores very large, oval, greenish slate colour, 0006×00035 in.

725. Boletus erythropus. *P.* "Dotted-stem Boletus."

Pileus tomentose, almost velvety, tawny; stem elongated, equal, not reticulated, dotted with red, squamuloso-punctate, reddish within at the base; tubes free.—*Fr. Epicr. p. 418. Fl. Dan. t. 1962. Letell. t. 612. Barla. t. 33, f. 6, 7.*

In woods. King's Cliffe.

Included by Fries with *B. luridus* as a variety, smaller, but more beautiful. Flesh yellow here and there, blue when cut, but partially red, with a more slender, punctato-squamulose, and not reticulated stem.

726. Boletus purpureus. *Fr.* "Purple Boletus."

Pileus pulvinate, somewhat velvety, opaque, dry, purplish-red; stem stout, yellow, variegated with purple veins and dots; tubes

almost free, minute, greenish yellow, orifice purple-orange.—*Fr. Epicr. p.* 418. *Krombh. t.* 37, 12-15. *Ann. N. H. no.* 341. *Letell. t.* 678. *Barla. t.* 33, *f.* 8-10.

In woods. Rare. King's Cliffe. Staplehurst.

[Mid. Carolina.]

Rev. M. J. Berkeley states that he has found all these four species together in the same wood, which consisted chiefly of lime trees. Spores somewhat spindle-shaped, green sepia-brown, 0004×0002 in. (*Fig. 62, reduced.*)

B. DERMINI—spores subferruginous.

727. *Boletus viscidus.* L. "Viscid Boletus."

Pileus pulvinate, soft, smooth, viscid, dingy-yellowish; veil subannulate, torn, white, appendiculate; stem torn, reticulated above; tubes wide, adnate, unequal, livid.—*Fr. Epicr. p.* 423. *Ann. N. H. no.* 278.

In woods. Rare.

The rather large and angular tubes will distinguish this from the rest of the species with rusty spores. Spores very small, spindle-shaped, elongated, brownish green, 00038×00012 in.

728. *Boletus versipellis.* Fr. "Orange-cap Boletus."

Pileus pulvinate, dry, at first closely tomentose, then scaly and smooth between; veil membranaceous, annular, inflexed, appendiculate; stem solid, attenuated above, rugoso-squamose; tubes free, plane, minute, dingy-white, orifice greyish.—*Fr. Epicr. p.* 424. *Batt. t.* 50, *f. A.* *Schæff. t.* 103. *Sow. t.* 110. *Krombh. t.* 32.

In woods.

[Mid. Carolina.]

Pileus of a beautiful orange, closely allied to *Boletus scaber*, but apparently not so common. Spores spindle-shaped, pale, ochraceous, 00056×00021 in.

729. *Boletus scaber.* Fr. "Shaggy Boletus."

Pileus pulvinate, smooth, viscid when moist, at length rugulose or rivulose; margin veiled; stem solid, attenuated, rough with fibrous scales; tubes free, convex, round, minute, white, then dingy.—*Fr. Epicr. p.* 424. *Lenz. f.* 32. *Vitt. t.* 28. *Bull. t.* 132, 489, *f.* 1, 2. *Fl. Dan. t.* 833, *f.* 3. *Eng. Fl. v. p.* 153. *Badh. i. t.* 7, *f.* 1, ii. *t.* 6, *f.* 1, 2. *Barla. t.* 35. *Vent. t.* 9, 10. *Sow. t.* 175. *Krombh. t.* 32, *f.* 1-10, *t.* 35, *f.* 1-6. *Schæff. t.* 104. *Huss. i. t.* 57. *Hogg. & Johnst. t.* 22.

In woods. Common. Esculent.

[Carolina, U. S.]

Pileus 3-7 in. or more broad, pulvinate, viscid when moist, very variable in colour, white, cinereous, brown olive, deep orange, or vermillion, smooth or minutely downy, the down sometimes collected into minute fasciculate scales; flesh very thick, soft, not changeable in young specimens, in older ones reddish-grey when bruised, and sometimes black; tubes white, pulvinate, stained with the yellow-brown spores, their orifices often ferruginous before the expansion of the pileus, minute, round; stem 6 in. or more high, attenuated upwards, squarrose with black or orange scales, sometimes marked with coarse-raised lines. At first the stem is ovate and the pileus very narrow. There are frequent traces of a floccose veil.—*M. J. B.* Spores spindle-shaped, pale brown, $\cdot 00055 \times \cdot 00022$ in. I have found a variety at Staplehurst, with the pileus snow-white.—*W. G. S.*

C. HYPORRHODII—spores roseate.

730. *Boletus alutarius.* *Fr.* "Tan-coloured Boletus."

Pileus pulvinate, expanded, soft, velvety, then smooth, brownish-tan; flesh white; stem solid, bulbous, nearly even, white; apex pitted; tubes depressed about the stem, short, plane, round, white, brown when bruised.—*Fr. Epicr. p. 425. Krombh. t. 74, f. 8, 9. Ann. N.H. no. 342.*

In woodland pastures. Rare.

731. *Boletus felleus.* *Bull.* "Bitter Boletus."

Pileus pulvinate, soft, smooth, even, brownish or reddish-grey; stem solid, attenuated upwards, reticulated; tubes adnate, convex, elongated, angular, white then flesh-coloured, as well as the substance of the pileus when broken.—*Fr. Epicr. p. 425. Bull. t. 379. Krombh. t. 74, f. 1-7. Ann. N.H. no. 79. Smith, P.M. f. 29.*

In woods, &c. Rare. King's Cliffe.

[Low. and Mid. Carolina.]

Spores spindle-shaped, salmon colour, $\cdot 00064 \times \cdot 0002$ in.

D. LEUCOSPORI—spores white.

732. *Boletus cyanescens.* *Bull.* "Sibthorp's Boletus."

Pileus convexo-expanded, closely tomentose or floccoso-squamose, opaque, tan-coloured, becoming brownish; flesh compact, white, dark-blue when broken; stem stuffed, then hollow, ventricose, villosopruinose, of the same colour, constricted above, even, white; tubes free, minute round, white, then yellow.—*Fr. Epicr. p. 426. Bull. t. 369. Letell. t. 654. Krombh. t. 35, f. 7-9. Seem. Journ. t. 30, f. 7, 8. Roq. t. 8, f. 1. Eng. Fl. v. p. 154. Barla. t. 37, f. 1-7.*

In woods. Oxford, Neatishead, &c.

"Pileus 2-5 in. broad, rigid, pale, straw-coloured, subfuliginous, the margin acute; flesh white, when broken changing instantly to the most beautiful azure blue, and when squeezed distilling a blue juice; tubes short, when young scarcely a line long, white or lemon-coloured; stem distinct from the pileus, the apex contracted, brittle, never reticulated, but villosopruinose."—*Fries*.

Tubes very pale lemon colour. Spores white, or with a suggestion of sulphur, spindle-shaped, .0006 in. long. It has now been recorded in Oxfordshire, Norfolk, Herts, Surrey, Devon, and Beds (Abbot).

733. Boletus castaneus. Bull. "Chestnut Boletus."

Pileus convex, expanded or depressed, firm, opaque, velvety, cinnamon; stem stuffed, then hollow, attenuated from the somewhat bulbous base, cinnamon; flesh white, unchangeable; tubes free, short, round, white, then dirty-yellow.—*Fr. Epicr. p. 426. Bull. t. 328. Huss. ii. t. 17. Eng. Fl. v. p. 152. Barla. t. 32, f. 11-15.*

In woods. Rare. Highgate.

[Mid. Carolina.]

Pileus 3 in. broad, depressed when old, but broadly pulvinate in the centre, subtomentose, the down raised up into little flat scales, beautiful dark-rufous tan; flesh thick, mottled, stained beneath the cuticle with the colour of the pileus, not changing colour, viscid, insipid or subacid; tubes vivid yellow, half-free, not reaching to the extreme margin; spores yellow; stem sometimes short, swelling in the centre, attenuated below, hollow, sometimes long and equal, beautifully tinged with yellow and rufous.—*M. J. B.*

Gen. 19.

STROBILOMYCES, Berk.



Fig. 63.

Hymenophore quite distinct from the hymenium. Pileus fleshy, at length tough. Spores globose, or broadly elliptic, minutely rough.—*M. J. B.*

(Fig. 63.)

734. Strobilomyces strobilaceus. Berk. "Cone-like Boletus."

Blackish umber. Pileus pulvinate, rough with thick floccose scales; stem equal, veiled, sulcate above; tubes adnate, white,

angular, whitish-brown.—*Berk. Outl.* p. 236. *Dicks. i. t.* 3, f. 2. *Pers. M.E. t.* 19. *B. strobilaceus*, *Fr. Epicr.* p. 422. *Krombh. t.* 4, f. 28-30, t. 74, f. 12-13. *Eng. Fl.* v. p. 154.

In fir woods. Rare. Ludlow. Haywood Forest, Hereford.
[Carolina. Canada.]

Spores very dark. Pileus 2 in. broad, tessellated or cracked, like the cone of the Scotch fir; pores very white; stem 3-4 in. high, thick, solid.—*M. J. B.* (Fig. 63.)

Pileus 2-4 in. broad, tough, pulvinate, brown, broken up into large, thick projecting scales (like the cone of the Scotch fir), merging into a thick floccose, ragged and pendulous, white veil at margin; stem solid, equal, coarsely, fibrillose, 3-6 in. long, $\frac{1}{2}$ in. or more thick, brown at the base, and white at the deeply sulcato-reticulated apex, which runs gradually into the tubes; tubes white, very large, adnate, or with a decurrent tooth anastomosing; spores oval, nearly globose, stalked, blackish-brown, 00038×00053 in. The whole plant turns deep sienna-red when cut or bruised.—*W. G. S.*

Gen. 20.

POLYPORUS, Fr. Gen. Hym.



Fig. 64.

Hymenophore descending into the trama of the pores, which are not easily, if at all, separable, and changed with them into a distinct substance.

(Fig. 64.)

Hymenophore descending into the trama of the pores, which are confluent with the substance of the pileus, and not easily, if at all, separable from each other, or from the hymenophore; the trama, with the pores, when full grown, being different from the hymenophore in substance and often in colour. Pores at first clearly formed by the perforation of the substance of the pileus, very minute, imperfect, or entirely absent, then rounded, angular, or lacerated.

Fungi of various forms, at first of an acid odour, not preformed like *Boletus*, but growing indefinitely. *Polyporus* is the central genus of the *Polyporei*, more or less approaching in character to all the other genera, as *Agaricus* does to the genera of the *Agaricini*. The sections of *Polyporus* are founded on structural characters, but the genus might be divided according to the colour of the spores, like *Agaricus*.—*W. G. S.*

Sect. 1. Mesopus—pileus entire, stem distinct.

735. *Polyporus brumalis*. Fr. "Winter Polyporus."

Pileus between fleshy and coriaceous, subumbilicate, zoneless, in the first season dingy villous, in the second squamulose, be-

coming smooth, pallid; stem thin, hirsuto-squamulose, pallid; pores oblong, angular, slender, acute, denticulate, white.—*Fr. Epicr. p.* 430. *Batsch. f.* 42. *Fl. Dan. t.* 1297. *Rostk. t.* 8. *Eng. Fl. v. p.* 135. *Ann. N.H. no.* 343. *Krombh. t.* 4. *f.* 19-21. *Fl. ex. no.* 204. *Fckl. exs.* 1396.

On dead trunks and branches. Rare. [Low. and Mid. Carolina.]

Pileus 1-4 in. broad, nearly plane, depressed in the centre, dingy, clothed with minute scales, at length fawn-coloured, and nearly smooth. Pores very slightly angular, white, the dissepiments rather thick. Stem $\frac{3}{4}$ -2 in. high, 2-4 lin. thick, central, velvety, hirsute or squamulose.—*M.J.B.*

736. Polyporus fuscidulus. *Fr.* "Yellow-brown Polyporus."

Pileus fleshy, tough, subcoriaceous, convexo-plane, zoneless, even, yellowish-brown; stem rather slender, equal, smooth, pallid; pores adnate, somewhat rounded or angular, obtuse, quite entire, yellowish.—*Fr. Epicr. p.* 431. *Bolt. t.* 170.

Amongst chips, &c. Rare.

Stem 1-2 in. long, 2 lin. thick, nearly straight, equal, or thickened towards each extremity, tawny or yellowish. Pileus 1-2 in. broad; flesh tough, yellowish white.

737. Polyporus leptcephalus. *Fr.* "White-pored Polyporus."

Pileus tough, coriaceous, convexo-plane, thin, smooth, zoneless, even, pallid, then fawn-coloured; stem short, smooth, pallid; pores adnate, minute, subrotund, obtuse, whitish.—*Fr. Epicr. p.* 432. *Jacq. Misc. i. t.* 12. *Paul. t.* 164. *f.* 1. *Mich. t.* 70. *f.* 1. *Eng. Fl. v. p.* 135.

On trunks. Rare.

Pileus 1 in. broad, tawny-bay, flat, thin, leather-like; pores white, very short; stem pale or reddish-brown, thick as a crow quill, and about half an inch high.—*With.*

738. Polyporus lentus. *Berk.* "Tough Polyporus."

Pileus fleshy, but tough, umbilicate, minutely scaly, especially at first; stem hispid, furfuraceous, rather slender, incurved, central or excentric; pores irregular, decurrent, white.—*Berk. Outl. p.* 237. *t.* 16, *f.* 1. *Eng. Fl. v. p.* 134.

On old furze stems. Northamptonshire and Notts.

Pileus $1\frac{1}{2}$ in. broad, convex or slightly depressed, at first furfuraceo-squamulose, reddish-brown, at length nearly smooth, ochraceous; the margin fibrilloso-squamose, of a tough, fleshy substance; pores large, rather deep, decurrent, roundish or subquadrate, at first white; edges slightly toothed,

and powdered with the white oblong spores; stem $\frac{1}{2}$ -1 in. high, $\frac{3}{8}$ in. thick, central, covered with pores to the very base, only the lower ones abortive, and their interstices pilose, or distinctly furfuraceous, nearly of the colour of the pileus.—*M. J. B.*

739. Polyporus Schweinitzii. *Fr.* "Schweinitz's Polyporus."

Pileus thick, spongy, then corky, strigoso-tomentose, rough, bright brown; stem thick, very short or obsolete, ferruginous; pores large, variable, and torn, greenish-sulphur.—*Fr. Epicr. p.* 433. *Sv. Bot. t.* 720. *Mich. t.* 70. *f.* 1. *Ann. N.H. no.* 805. *Corda. v. t.* 10. *f.* 88. *Kl. ex. no.* 513.

Amongst roots of pines. Rare. [Mid. Carolina.]

It occurs with a central stem, and also imbricated, and varies in the thickness of the tomentose coat.—*B. & Br.* Spores oval, white or transparent, 00014×00031 in.

740. Polyporus rufescens. *Fr.* "Rufescent Polyporus."

Flesh-coloured. Pileus between spongy and corky, soft, unequal, hairy; stem short, irregular; pores large, sinuose and lacerated, white or flesh-coloured.—*Fr. Epicr. p.* 433. *Sow. t.* 190.

On the ground, about stumps. [United States.]

Smaller than *P. Schweinitzii*, softer, and of a different colour.

741. Polyporus perennis. *Fr.* "Perennial Polyporus."

Cinnamon, then bright brown. Pileus coriaceous, thin, plane, then infundibuliform, velvety, becoming smooth, zoned; stem rather firm, thickened below, velvety; pores minute, angular, acute, at first veiled, then naked and torn.—*Fr. Epicr. p.* 434. *Rostk. t.* 6. *Bolt. t.* 87. *Sow. t.* 192. *Fl. Dan. t.* 1075, *f.* 1. *Bull. t.* 449, *f.* 2. *Schæff. t.* 125. *Kl. exs. no.* 31. *Fckl. exs.* 1400. *Paul. t.* 164, *f.* 5, 6. *Huss. i. t.* 51. *Eng. Fl. v. p.* 136. *Price, f.* 86. *Vent. t.* 61, *f.* 1. *Bisch. f.* 3257.

On the ground and stumps. [United States.]

Pileus $1\frac{1}{2}$ -2 in. broad, varying in depth of colour, cup-shaped when young, nearly plane when old; often confluent, zoned, soft and velvety, and marked with little raised, radiating lines, giving it a striated appearance; margin fimbriate or lacinated; pores small, roundish or angular, at length torn, decurrent. Stem 1 in. high, variable in thickness, very tough, velvety, bulbous at the base.—*M. J. B.* Spores oval, white, 0001×00018 in. A beautiful variety occurs on charcoal heaps in woods, with a zoned pileus, dark rich chestnut brown, sometimes almost jet black.

Sect. 2. Pleuropus —pileus horizontal, stem lateral or excentric.

742. Polyporus squamosus. *Fr.* "Scaly Polyporus."

Pileus fleshy, tough, flabelliform, expanded, sub-ochraceous, variegated, with broad, adpressed, spot-like, centrifugal, darker scales; stem excentric and lateral, blunt, reticulated above, blackened at the base; pores thin, variable, at first minute, then broad, angular and torn, pallid.—*Fr. Epicr. p.* 438. *Grev. t.* 207. *Rostk. t.* 2. *Schæff. t.* 101, 102. *Fl. Dan. t.* 983, 1196. *Bolt. t.* 77. *Paul. t.* 16. *Sterb. t.* 13. 14. *Huss. i. t.* 51. *Cooke, B.F. t.* 19. *Vent. t.* 37. *Price, f.* 115. *Kl. exs. no.* 30. *Harz. t.* 32. *Gard. Chron.* (1860), *p.* 975. *Eng. Fl. v. p.* 134. *Fckl. exs.* 1328.

On trunks, especially ash. Common.

Solitary or imbricated. From a globose, or turgid, scaly, blackish knob, arise one or more stems, which are at first slightly compressed, flat, and hollowed out above where they are furfuraceous; gradually the depressed surface expands, and the hymenium is formed beneath the small scales of the upper part of the stem. Pileus, when fully expanded, pallid ochraceous, with scattered, brown, adpressed scales; spores oblong, white. In vaults and hollow trees it sometimes assumes the form of a *Clavaria*, but in this case seldom produces a pileus.—*M. J. B.* Spores oval, white, very large, '0005 × '000025 in.

743. Polyporus Rostkovii. *Fr.* "Rostkovius's Polyporus."

Pileus fleshy, tough, dimidiate, somewhat infundibuliform, smooth, even, dingy; stem long, excentric, reticulated, abruptly black, base thickened; pores decurrent, broad, pentagonal, acute, toothed, white, then dirty yellow.—*Fr. Epicr. p.* 439. *Rostk. t.* 17. *Ann. N.H. no.* 709. *Bisch. f.* 3305.

On stumps. Rare.

Thin, flaccid, 6 in. across, infundibuliform, but often lateral, smooth, even, pale ochraceous, mottled below with darker spots and virgate, dark brown at the base; margin lobed, involute. Flesh white, tough. Stem connate, black, tough, reticulate from the decurrent pores. Pores large, 2 lines or more long, elongated, edge obtuse, or very thin and torn. Spores with two nuclei, '0005 in. long, '0002 in. broad.—*B. & Br.*

744. Polyporus picipes. *Fr.* "Pied-stem Polyporus."

Pileus fleshy, coriaceous, rigid, tough, even, smooth, depressed behind or in the centre; stem excentric and lateral, equal, firm, at first velvety, then naked, punctate, with black dots; pores decurrent, rounded, small, tender, white, at length reddish-grey.—*Fr. Epicr. p.* 440. *Grev. t.* 202. *Pers. Ic. Pict. t.* 4, *f.* 1, 2. *Rostk. t.* 20. *Fckl. exs.* 1397.

On trunks.

Imbricated, flesh white. Pileus depressed behind, commonly emarginate. Colour usually livid, with a chestnut coloured disc.

745. Polyporus varius. *Fr.* "Variable Polyporus."

Pileus fleshy, tough, thin, soon woody, smooth, sub-irregular, depressed behind or in the centre; stem excentric and lateral, even, smooth, gradually blackish-cinereous downwards; pores decurrent, minute, short, rounded, unequal, whitish, or watery cinnamon.—*Fr. Epicr. p.* 440. *Batsch. f.* 129. *Bull. t.* 360, 445, *f.* 2. *Buxb. v. t.* 15, *f.* 2. *Bolt. t.* 168. *Eng. Fl. v. p.* 136. *Kl. exs. no.* 223.

On trunks.

[Mid. & Up. Carolina.]

Variable in size, $\frac{1}{2}$ -4 in. broad. Pileus hard, lateral, excentric or regular, infundibuliform or convex, deep red brown or dirty white, smooth and even. Pores decurrent, very minute and shallow. Stem, when present, generally either altogether or abruptly jet black at the base. Occasionally the stem is altogether pale.—*M. J. B.*

746. Polyporus elegans. *Fr.* "Elegant Polyporus."

Pileus equally fleshy, soon indurated, woody, expanded, even, smooth, self-coloured; stem excentric or lateral, even, smooth, pallid, base from the first abruptly black, rooting; pores plane, minute, sub-rotund, pallid, yellowish-white.—*Fr. Epicr. p.* 440. *Bull. t.* 46. *Fl. Dan. t.* 1075, *f.* 1. *Rostk. t.* 11. *Bolt. t.* 83. *Fckl. exs.* 1395.

On trunks.

[Up. Carolina.]

var. β. nummularius, smaller, thinner, sub-regular; stem equal, excentric.—*Rostk. t.* 12. *Bull. t.* 124.

On trunks.

Pileus 2-4 in. broad, pale ochre or orange, shining, not infundibuliform, scarcely depressed. In the variety the pileus does not exceed 1 in.

747. Polyporus quercinus. *Fr.* "Oak Polyporus."

Pileus corky, soft, tongue-shaped, very thick, convexo-plane, even, at first flocculoso-granulose, pallid tan, narrowed behind into the thick horizontal stem; pores short, minute, whitish.—*Fr. Epicr. p.* 441. *Krombh. t.* 5, *f.* 3-5, *t.* 48, *f.* 11-13. *Paul. t.* 18, *f.* 1-4. *Huss. i. t.* 52. *Ann. N. H. no.* 344.

On old oaks. Rare. Apethorpe, Kent.

A very distinct species, having somewhat the form of *Fistulina hepatica*. It is of a beautiful yellow-brown with rather shallow pores.—*B. & Br.*

748. Polyporus lucidus. *Fr.* "Shining Polyporus."

Pileus corky or woody, flabelliform, sulcate, rugose, yellow, then reddish-chestnut, varnished and shining, as well as the lateral, equal stem; pores determinate, long, minute, white, then cinnamon.—*Fr. Epicr. p.* 442. *Grev. t.* 245. *Rostk. t.* 13. *Krombh. t.* 4, *f.* 22-24. *Sow. t.* 134. *Paul. t.* 10, *f.* 1-2. (*Batt. t.* 36. *t.* 35, *D. var.*) *Berk. Outl. t.* 15, *f.* 2. *Eng. Fl. v. p.* 136. *Vent. t.* 49, *f.* 1, 2. *Roq. t.* 2, *f.* 1.

On the ground about stumps.

[United States.]

Pileus 2-6 in. broad, generally more or less oblique, very variable in thickness, rugose, often marked with concentric grooves or ridges chocolate brown, the edge often tawny or bright chestnut, shining as if varnished, with occasionally a vitreous appearance. Pores very minute, sub-rotund, pale, equal, at length cinnamon. Stem 6-10 in. high, 1 in. or more thick, rugose, marked occasionally with transverse lines of growth, shining like the pileus, sometimes chocolate. Both the pileus and stem occasionally marked with minute wavy wrinkles.—*M. J. B.*

Sect. 3. Merisma—divided into numerous pileoli.

749. Polyporus intybaceus. *Fr.* "Grey-branched Polyporus."

Very much branched, fleshy, somewhat brittle, pileoli very numerous, dimidiate, expanded, sinuate, at length spathulate, nearly even, greyish-brown; stems united into a very short trunk; pores firm, obtuse, white, then brownish.—*Fr. Epicr. p.* 446. *Fl. Dan. t.* 1793. *Paul. t.* 30. *Huss. i. t.* 6. *Sow. t.* 87. *P. frondosus*, *Eng. Fl. v. p.* 137.

On trunks. Rare. Esculent.

Pilei very numerous, dimidiate, condensed into a convex tuft, $\frac{1}{2}$ -1 foot broad, imbricated, variously confluent, irregular, at first downy, dusky, then smooth, livid grey, disc depressed, dilated above, $\frac{1}{2}$ -1 in. broad, convex, the base confluent with the compound stem. Smell like that of mice.—*Fries.* Spores oval, white, 0002×00014 in.

750. Polyporus cristatus. *Fr.* "Crested Polyporus."

Branched, firmly fleshy, fragile, pileoli entire and dimidiate, imbricated, depressed, somewhat pulverulent or villous, then rimoso-squamose, greenish-brown; stems connate, irregular, white; pores minute, angular and torn, whitish.—*Fr. Epicr. p.* 447. *Rostk. t.* 16. *Schæff. t.* 113? *Eng. Fl. v. p.* 138. *Krombh. t.* 48, *f.* 15, 16. *Barla. t.* 29, *f.* 4-7. *Bisch. f.* 3297. *Fckl. exs.* 1394.

In beech woods. Rare.

[Mid. Carolina.]

Stem lateral, irregular, pruinose, white, at length brown. Pilei sub-carnose, irregular, confluent in an involute manner, villosa-pulverulent, about 3 in. broad, yellow-green. Pores unequal, dirty-white, when torn more or less of a green hue.—*Fries*.

751. Polyporus giganteus. *Fr.* "Large-branched Polyporus."

Imbricated, fleshy, tough, somewhat coriaceous; pilei dimidiate, very broad, flaccid, somewhat zoned, rivulose, bright-brown, depressed behind; stem branched, connate from a common tuber; pores minute, nearly round, pallid, at length torn.—*Fr. Epicr. p.* 448. *Rostk. t.* 19. *Schæff. t.* 267. *Bolt. t.* 76. *Huss. i. t.* 82. *Holms. t.* 13, var. *Eng. Fl. v. p.* 137. *Bisch. f.* 3324. *Fl. Dan. t.* 1793. *Fckl. exs. no.* 1897.

On trunks. Rare.

[Low. and Mid. Carolina.]

Forming large tufts, 1-2 feet or more broad, branched in an imbricated manner. Pilei sublateral, flaccid, various in form, the surface granulated with minute brown flocci, rigid, when dry squamoso-fibrillose, at first pale, then brownish-yellow, disc depressed, at length black. Pores minute, dirty brown when bruised, at length torn.—*Eng. Fl.* (Fig. 64, reduced.)

752. Polyporus sulfureus. *Fr.* "Sulphury Polyporus."



Fig. 65.

Cæspitose, of a cheesy consistence, soon growing pale, cracking; pileoli very broad, imbricated, undulated, nearly smooth, reddish-yellow; pores minute, plane, sulphur-coloured, at length torn.—*Fr. Epicr. p.* 450. *Grev. t.* 113. *Bisch. f.* 3287. *Kl. exs. no.* 1005. *Rostk. t.* 20. *Bull. t.* 429. *Sow. t.* 135. *Huss. i. t.* 46. *Berk. Outl. t.* 16, f. 3. *Eng. Fl. v. p.* 138. *Letell. t.* 626. *Price. f.* 116. *Fckl. exs.* 1392.

On trunks. Common.

[United States.]

Pilei imbricated, forming a large, compact, somewhat branched mass, sometimes 2-3 feet broad. Pores minute, often formed of inflexed or incurved portions of the mass. Spores white. Dry specimens are often incrustated with crystals of binxalate of potash.—*Eng. Fl.* Spores oval, white, minutely papillose, 0003×00023 in. (Fig. 65, reduced.)

753. Polyporus alligatus. *Fr.* "Connected Polyporus."

Cæspitose, fibrous or of a cheesy consistence, rigid, but brittle; pileoli imbricated, unequal, without zones, villous, isabelline or

tan-coloured; pores minute, soft, white, easily obliterated with flocci.—*Fr. Epicr. p. 450. Sow. t. 422.*

At the base of trunks. Rare.

754. Polyporus heteroclitus. *Fr.* "Ground Polyporus."

Cæspitose, coriaceous; pileoli sessile, expanded everywhere from a common, radical tubercle, lobed, villous, without zones, orange; pores irregular and elongated, golden-yellow.—*Fr. Epicr. p. 451. Bolt. t. 164. Eng. Fl. v. p. 135.*

On the ground, under oaks.

Pileus $2\frac{1}{2}$ in. broad. It shoots out several flat pieces from a hard and coriaceous root, which is white within, lying on the surface of the earth in a horizontal direction. Pores very variable in size and form.—*Purton.*

755. Polyporus salignus. *Fr.* "Willow Polyporus."

Imbricate, cæspitose, coriaceous, soft, elastic; pileoli dimidiate, dilated, reniform, incrustated with adpressed, whitish down, tumid, sublobate, somewhat sulcate and depressed about the margin; pores thin, crowded, elongated, flexuose, intricate, white.—*Fr. Epicr. p. 452. Bolt. t. 78. Batt. t. 38, E. P. salicinus, Grev., Rostk. t. 2.*

On willows.

Sect. 4. Apus—Sessile.

A. Anodermei.

756. Polyporus epileucus. *Fr.* "Grey-elm Polyporus."

Pileus of a cheesy consistence, firm, pulvinate, villososcrupose, unequally grey, internally white-zoned; pores round and elongated, obtuse, entire, white.—*Fr. Epicr. p. 452. Rostk. t. 26. Smith. Seem. Journ. 1868, p. 34. P. spumeus, Fl. Dan. t. 1794.*

On elm trunks. Nov. Holloway. London. [United States.]

It is a very large and handsome species, stemless, of a rich but subdued yellow colour, and somewhat corky consistence; the tubes are very minute, and about $\frac{3}{4}$ of an inch long; the pileus is tough, shaggy, and dingy-white.—*W. G. S.*

757. Polyporus chioneus. *Fr.* "Soft white Polyporus."

White. Pileus fleshy, soft, without zones, somewhat even and smooth, rather expanded behind; margin acute, inflexed; pores short, small, rounded, equal, quite entire.—*Fr. Epicr. p. 453. Pers. M.E. ii., t. 15. f. 2. Ann. N.H. no. 806.*

On trunks.

Always soft, fragile, hyaline white when moist, whitish when dry, about 1 in. broad. Spores white, oval, $\cdot 0008 \times \cdot 00013$ in.

758. Polyporus fragilis. Fr. "Fragile Polyporus."

Whitish, spotted with brown when touched; pileus between fleshy and fibrous, fragile, plano-depressed, or versiform, fibroso-rugose, convex below; pores slender, elongated, flexuose, intricate.—Fr. *Epicr.* p. 454. *Ann. N.H.* no. 710.

On fir. Cornwall.

759. Polyporus cæsius. Fr. "Blue-grey Polyporus."

White, here and there tinged with blue; pileus fleshy, soft, tough, unequal, silky; pores small, unequal, elongated, flexuose, dentate, and torn.—Fr. *Epicr.* p. 454. *Sow. t.* 226. *Eng. Fl.* v. p. 139. *Fl. Dan. t.* 1963. f. 2.

On fallen sticks.

[Mid. Carolina.]

A small species, $\frac{1}{2}$ -3 in. broad, variously imbricated and lacinated, sometimes stipitate, very delicate, changing when touched to bluish; flesh thin; pores of various lengths, sometimes oblique, and deeper than the flesh of the pileus.—M. J. B. Spores pale blue, oval, $\cdot 0001 \times \cdot 0005$ in.

760. Polyporus destructor. Fr. "Destructive Polyporus."

Pileus fleshy, watery, fragile, effused or reflexed, rugose, whitish, tinged with brown, zoned within; pores long, rounded, toothed, and torn, whitish.—Fr. *Epicr.* p. 454. *Krombh. t.* 3, f. 3. *Rostk. t.* 27. *Bisch. f.* 3422. *Kl. exs. no.* 225.

On larch and Scotch fir, and on the ground. [Mid. Carolina.]

Waved and incrusting, broad, wholly resupinate.

761. Polyporus nidulans. Fr. "Nestling Polyporus."

Pileus fleshy, tough, very soft, subpulvinate, villous, becoming even, not zoned, reddish-grey, within of the same colour; pores long, medium sized, unequal, angular, tawny, inclining to brick-red.—Fr. *Epicr.* p. 455. *Schæff. t.* 136? *Ann. N.H.* no. 345. *Kl. exs. no.* 809, 1914.

On fallen sticks.

Fragrant when dry; colour of the pileus rufescent or yellowish; margin spreading, somewhat obtuse.

762. Polyporus rutilans. Fr. "Reddish Polyporus."

Pileus fleshy, tough, thin, soft, at first villous, then smooth, not zoned, tawny cinnamon, growing pale, of the same colour

within; pores short, minute, thin, equal, acute, cinnamon.—*Fr. Epicr. p. 455. Pers. Ic. & Desc. t. 6, f. 4. Ann. N.H. no. 346.*

On fallen branches. July.

When fresh very soft, of a beautiful reddish grey, and with a powerful but pleasant odour, like that of aniseed.—*B. & Br.*

763. Polyporus fumosus. *Fr.* "Smoky Polyporus."

Pileus fleshy, corky, firm, without zones, silky, becoming smooth, undulated, dingy pale umber, dilated and adnate behind, fibrous within and somewhat zoned; pores short, round, minute, whitish or dingy, darker when bruised.—*Fr. Epicr. p. 456. Tratt. Aust. t. 3, f. 5. Fl. Dan. t. 1963, f. 2. Fl. Boruss. t. 392. Bail. t. 31. Fckl. exs. 1391.*

On stumps.

Cæspitose or imbricated, thick, of a smoky hue.

764. Polyporus adustus. *Fr.* "Scorched Polyporus."

Pileus fleshy, tough, firm, thin, villous, pallid cinereous, margin straight, blackish, effuso-reflexed behind; pores short, minute, round, obtuse, whitish pruinose, soon cinereous brown.—*Fr. Epicr. p. 456. Fl. Dan. t. 1850, f. 1. Batsch, f. 226. Sow. t. 231. Eng. Fl. v. p. 139. Kl. exs. no. 620. ii. 412. Fckl. exs. 1390.*

On stumps.

[United States.]

Pores very small and grey, even in younger specimens always leaving a whitish margin on the under side, which will readily distinguish it.—*Sow.*

765. Polyporus crispus. *Fr.* "Crisped Polyporus."

Pileus fleshy, tough, coriaceous, rugose, blackish-cinereous, effuso-reflexed behind; margin thin, crisped, at length black; pores rather large, unequal, at length labyrinthiform, silvery-grey.—*Fr. Epicr. p. 457. Batsch, f. 227.*

On stumps.

[Mid. and Up. Carolina.]

Smaller than *P. adustus*. Pileus when young dingy black, floccoso-rugose, without zones; margin white, when mature thinner, becoming pale-grey, with a brown marginal zone.

766. Polyporus adiposus. *B. & Br.* "Foxy-white Polyporus."

White, here and there acquiring a foxy tinge; pileus soft, waxy, shortly reflexed, obscurely tomentose; hymenium rather thick; pores small, edge obtuse.—*Berk. Outl. p. 243. Ann. N.H. no. 711.*

On the ground.

Very variable in form, sometimes fixed by the apex, sometimes resupinate, white, waxy, thickish when fresh, but losing much of its substance in age, here and there acquiring a foxy tinge; substance not zoned within; pores when horizontal with the edges even, but often elongated and irregular, not stratosed; surface scarcely tomentose, uneven. Turning brownish in drying.—*B. & Br.*

767. Polyporus amorphus. *Fr.* "Amorphous Polyporus."

Pileus fleshy, tough, thin, generally effuso-reflexed, pores minute, unequal, golden-yellow, at first dusted with white.—*Fr. Epicr. p.* 457. *Sow. t.* 423. *Nees. f.* 223. *Eng. Fl. v. p.* 139. *Fckl. exs.* 1372.

On the ground amongst pine leaves.

Resupinate with the upper margin reflexed or dimidiate, imbricated, somewhat zoned, white and silky; pores minute, short, yellowish, or rich tawny, pruinose when young.—*M. J. B.*

768. Polyporus hispidus. *Fr.* "Hispid Polyporus."

Pileus compact, spongy, fleshy, dimidiate, pulvinate, hispid, sub-ferruginous, divergently fibrous within; pores minute, round, inclined to separate, fringed, paler.—*Fr. Epicr. p.* 458. *Grev. t.* 14. *Bolt. t.* 161. *Sow. t.* 345. *Bull. t.* 210, 493. *Krombh. t.* 48, *f.* 7-10. *Huss. i. t.* 29, 31. *Eng. Fl. v. p.* 138. *Kl. exs. no.* 1913. *Fckl. exs.* 1389.

On trunks of living trees. Common. [United States.]

Spores yellowish. Pileus a foot or more across, 4 in. thick, dimidiate, with occasionally an obsolete, knob-like stem, generally very hispid, but sometimes almost smooth and cracked, substance fleshy but fibrous, marked with concentric lines, which seem to indicate different intervals in which vegetation has been more or less dormant, brown, blackish, yellowish, or reddish-brown, below pale yellow or rich sienna brown, margin paler.—*M. J. B.*

769. Polyporus cuticularis. *Fr.* "Hairy Polyporus."

Pileus very thin, spongioso-carnose, then dry, plane, hairy-tomentose, ferruginous, then blackish-brown; margin fibroso-fimbriate, internally loose and parallel, fibrous; pores long, minute, pallid, then ferruginous.—*Fr. Epicr. p.* 458. *B. & Br. Ann. N. H.* (1866), no. 1137. *Bull. t.* 462. *Kl. exs. no.* 33.

On trunks. Burnham Beeches.

The hairs are curiously trifid at the apex, the spores yellow. Pores longer than the thickness of the flesh. Spores copious, ochraceous.

770. Polyporus spumeus. *Fr.* "Oozing Polyporus."

Whitish. Pileus fleshy, spongy, compact, pulvinate, gibbous, rugose, hispid; base stem-like; margin incurved; pores seceding, minute, round, acute, entire.—*Fr. Epicr. p.* 459. *Sow. t.* 211. *Berk. Outl. t.* 16, *f.* 4. *Eng. Fl. v. p.* 139. *Ann. N.H. no.* 78. *Fckl. exs. no.* 1384.

On trunks.

Plant 3-4 in. across, thick, oozing out from the tree in a very soft mass, which hardens in a day, and if it dries favourably the pileus becomes hispid.—*Eng. Fl.*

B. Placodermei.

*Pileus indurated
with a crust*

771. Polyporus dryadeus. *Fr.* "Dripping Polyporus."

Pileus spongy, fleshy, then corky, thick, pulvinate, sub-ferruginous, turning brown; cuticle thin, soft, pitted, then even and smooth; flesh fibrous, somewhat zoned, ferruginous; pores very long, slender, round, soft, ferruginous, orifice at first paler.—*Fr. Epicr. p.* 460. *Bull. t.* 458. *Huss. i. t.* 21. *Eng. Fl. v. p.* 143. *Rostk. t.* 9.

At the foot of old oaks.

Pileus 7 in. or more broad, $2\frac{1}{2}$ in. thick, obtuse, pulvinate, grossly tuberculated, minutely pitted towards the edge, and when fresh distilling drops of moisture, which is sometimes glutinous. When young cinnamon, when old cinereous or whitish, and the white surface when bruised changes to red-brown. Mass of spores nearly plane, pores minute red-brown within, their orifices whitish or sub-cinereous; substance silky; smell strong, sub-acid.—*M. J. B.*

772. Polyporus betulinus. *Fr.* "Birch Polyporus."

Pileus fleshy, then corky, ungulate, obtuse, smooth, without zones; cuticle even, evanescent, brownish, vertex oblique, umbonately expanded, adnate; pores short, minute, round, unequal, white, at length seceding.—*Fr. Epicr. p.* 461. *Grev. t.* 246. *Rostk. t.* 22. *Bull. t.* 312. *Fl. Dan. t.* 1254. *Eng. Fl. v. p.* 140. *Bisch. f.* 3296. *Kl. exs. no.* 32. *Fckl. exs. no.* 1387.

On birch trees.

Pileus 4-6 in. across, smooth, pale reddish-brown when mature, often mottled, roundish, or somewhat reniform; flesh white, very thick; pores white or tinged with brown, narrow, the orifices toothed, separable from the pileus when fresh, but really concrete with it. Spores white.—*Grev.* Taste and smell acid.

773. Polyporus pallescens. Fr. "Pallid Polyporus."

Pileus fleshy, spongy, then corky, thin, zoneless, even, smooth, yellowish; margin acute, of the same colour; pores short, minute, roundish, yellowish white.—*Fr. Epicr. p. 463. Sow. t. 230. Eng. Fl. v. p. 141. Fckl. exs. no. 1379.*

On old stumps.

[Mid. & Up. Carolina.]

Thin, imbricated, 2-3 in. or more broad, with scarcely any trace of zones, more or less tuberculated, pores minute, many quite superficial, but towards the base a line or more deep, with a pulverulent appearance, arising from a very minute down.—*M. J. B.*

774. Polyporus vegetus. Fr. "Lime Polyporus."

Pileus broad, dilated, smooth, opaque, brown, annual zone broad, concentrically sulcate, substance floccose, lax, very thin; cuticle of the second season thick, separable; pores minute, seceding, umber, each annual stratum separated by a distinct floccose layer.—*Fr. Epicr. p. 464. Ray. Syn. ii. app. 335.*

On lime trees.

775. Polyporus applanatus. Fr. "Flattened Polyporus."

Pileus expanded, tuberculose, obsoletely zoned, pulverulent, or smooth, cinnamon, becoming whitish, cuticle crustaceous, rigid, at length fragile, within very soft, loosely floccose; margin tumid, white, then cinnamon; pores very small, sub-ferruginous, orifice whitish, brownish when bruised.—*Fr. Epicr. p. 465. Batsch. f. 130. Bull. t. 454, f. C. Fl. Boruss. t. 393. Fckl. exs. no. 1388.*

On trunks.

[Mid. & Up. Carolina.]

776. Polyporus fomentarius. Fr. "Dingy-hoof Polyporus."

Pileus ungulate, dilated, thick, smooth, remotely and concentrically zoned, smooth, opaque, dingy, becoming whitish, soft within, floccose, tawny-ferruginous, cuticle thick, very hard, persistent; margin, and very long minute pores, distinctly stratose, at first pruinose, then ferruginous.—*Fr. Epicr. p. 465. Lenz. f. 48. Sow. t. 133. Batt. t. 37, f. E. Eng. Fl. v. p. 144. Kl. exs. no. 222. Schnz. t. 16, f. 28. Fckl. exs. no. 1386.*

On trunks. Common.

[United States.]

Pileus 4-5 in. broad, subtriangular, obsoletely zoned, nodulose, brownish-grey, resembling coffee slightly tinged with milk, sometimes in age, especially when growing on birch, nearly white, occasionally tinged with bright yellow; margin in general sub-acute, but sometimes very obtuse,

substance reddish-brown, varying in density. Pores very minute, stratified, whitish, glaucous, or yellowish-grey, at length ferruginous, the mass of them generally concave.—*M. J. B.*

777. Polyporus nigricans. *Fr.* "Black-hoof Polyporus."

Pileus pulvinate, very thick, densely and concentrically sulcate, smooth, shining, black, cuticle very hard, crustaceous, varnished, persistent, internally very hard, ferruginous; margin very obtuse, ferruginous; pores very small, plane, confluent, stratose, naked, of the same colour.—*Fr. Epicr. p. 466. Eng. Fl. v. p. 144. Bisch. f. 3426.*

On birch.

Similar in form to *P. fomentarius*, but manifestly distinct.

778. Polyporus igniarius. *Fr.* "Rusty-hoof Polyporus."

Pileus at first tuberculoso-globose (immarginate), even, with a thin flocculent crust which becomes white, then unguulate ferruginous, becoming blackish-brown, opaque; cuticle concrete, pitted unequally, very hard, as well as the zoned, ferruginous flesh; margin rounded; pores very small, convex, stratose, cinnamon, at first whitish.—*Fr. Epicr. p. 466. Lenz. f. 47. Fckl. exs. no. 1383 (?) Sow. t. 182. Mich. t. 62. Eng. Fl. v. p. 144. Vent. t. 61, f. 4. Kl. exs. no. 363.*

On willows, poplars, plums, &c. Common. [United States.]

The pileus is narrower and much thicker than in *P. fomentarius*, resembling a horse's hoof; margin obtuse, and the mass of tubes in general plane or very convex. Occasionally the pileus is imperfectly developed.—*M. J. B.*

779. Polyporus fulvus. *Fr.* "Tawny-hoof Polyporus."

Pileus between woody and corky, very hard, globoso-tuberculose, then triangular, subimbricate, at first hairy or villous, pale tawny; margin rounded, internally of the same colour, radiating and zoned; pores short, round, rather minute, cinnamon, at first covered with a cinereous-yellow dust.—*Fr. Epicr. p. 466. Rostk. t. 31. Tratt. Aust. t. 5, f. 9. Batt. t. 37, H. B. & Br. Ann. N.H. (1866), no. 1138. Br. Bath. Trans. 1870, p. 83.*

On decayed trunks. Batheaston.

Distinct from *P. igniarius*, to which it is allied.

780. Polyporus ribis. *Fr.* "Currant-bush Polyporus."

Pileus corky, coriaceous, rather soft, somewhat plane, velvety, nearly even, ferruginous, then umber; margin acute; pores

short, small, naked, tawny, as well as the margin and flesh.—*Fr. Epicr. p. 467. Fl. Dan. t. 1790, f. 2. Desm. exs. no. 314. Eng. Fl. v. p. 145. Corda. Sturm. t. 62. Kl. exs. no. 118. Fckl. exs. no. 1381.*

At the base of currant and gooseberry bushes. Common.

Imbricated, 3 in. or more broad, thin, zoned, and velvety, of a rather rich tawny-brown; margin paler and brighter; substance soft, silky; pores short, larger than in *P. igniarius*, brownish-grey.—*M. J. B.*

781. Polyporus conchatus. *Fr.* "Shell-shaped Polyporus."

Pileus corky or woody, thin, effuse, sub-conchiform, reflexed, concentrically sulcate, tomentose, bright-brown; margin acute; pores short, small, cinnamon.—*Fr. Epicr. p. 467. Eng. Fl. v. p. 145. Fckl. exs. no. 1382.*

On trunks.

[Low. and Mid. Carolina.]

The principal distinction between this and *P. ribis* appears to reside in the harder substance, and smoother pileus. It varies in the degree in which its surface is grooved.—*M. J. B.*

782. Polyporus salicinus. *Fr.* "Scented-willow Polyporus."

Pileus woody, very hard, undulate, smooth, in great part resupinate; margin short, obtuse, patent, cinnamon, then brown; pores very small, round, ferruginous, cinnamon.—*Fr. Epicr. p. 467. Eng. Fl. v. p. 140. Ann. N.H. no. 346, B.*

On willows. Common.

[United States.]

Hard when dry. Scent very strong, like that of aniseed in the fresh plant.

783. Polyporus ulmarius. *Fr.* "Elm Polyporus."

Pileus corky or woody, undulated, tuberculose, crustaceous, smooth, white without and within; pores decurrent, minute, round, stratose, yellowish.—*Fr. Epicr. p. 469. Sow. t. 88. Batt. t. 36, f. C. Huss. i. t. 64. Berk. Outl. t. 16, f. 5. Eng. Fl. v. p. 142. Kl. exs. ii. no. 616.*

On old elms. Common.

Effused with an obtuse, occasionally free margin, forming a new stratum every year, so that a section gives several distinct layers of pores and flesh, alternating with each other; flesh white; pores minutely tawny; substance, when dry, hard and corky.—*M. J. B.*

784. Polyporus fraxineus. *Fr.* "Ash Polyporus."

Pileus corky or woody, smooth, flattened, zoneless, white, then rubiginous and brown; at first even, then concentrically sulcate-plicate, pallid within; pores minute, short, rufous, at first clothed

with white sebaceous down, as well as the margin.—*Fr. Epicr. p. 470. Bull. t. 433. Eng. Fl. v. p. 142.*

At the base of ash trees.

Solitary or imbricated, thick, rugged, somewhat zoned, dark red-brown; substance corky, pale. Pores minute, pale, of the same colour as the pileus within. Smell strong and penetrating.—*M. J. B.*

785. Polyporus cytisinus. *Berk.* "Laburnum Polyporus."

Large, imbricated; pileus coarsely tuberculated, hard, woody; margin subacute; substance nearly white, as well as the minute pores.—*Berk. Outl. p. 247. Sow. t. 288. Eng. Fl. v. p. 142.*

At the foot of a laburnum. London.

A foot or more across. Imbricated, dimidiate, quite smooth, at least when dry, but coarsely tuberculated; substance slightly zoned, very thick and close, pale, evidently composed of two or three successive layers.—*M. J. B.*

786. Polyporus variegatus. *Fr.* "Variegated Polyporus."

Pileus between corky and woody, smooth, flattened, even, zoneless, shining, variegated with orange and bay, pallid within; pores round, minute, short, unequal, and torn, yellowish.—*Fr. Epicr. p. 470. Sow. t. 368.*

On trunks.

787. Polyporus cervinus. *Pers.* "Fawn-coloured Polyporus."

Effused, very broad; pileus somewhat reflexed, zoned, cinereous-umber, clothed with spongy down; pores large, variable, greyish; dissepiments rigid.—*Pers. M. E. ii. p. 87. Ann. N. H. no. 347.*

On fallen branches of beech.

[Mid. Carolina.]

Remarkable for its large pores and rigid dissepiments, especially when young.—*B. & Br.*

788. Polyporus annosus. *Fr.* "Imbricated Polyporus."

Pileus woody, convex, expanded, rugoso-tuberculose, in the first season silky, in the second, and after, covered with a rigid, smooth, blackish crust, white within; margin obtuse, whitish, as well as the medium-sized, obtuse pores.—*Fr. Epicr. p. 471. Schæff. t. 138. f. 1-3. P. Scoticus, Eng. Fl. v. p. 142.*

On stumps of larch.

[United States.]

Forming masses 3-18 in. wide of imbricated, rugged, or radiato-striate, brown pilei, occasionally tawny towards the margin, marked with strong, vaulted zones, which arise from each annual layer projecting beyond that of

the preceding year; substance white, hard, and woody; pores middle-sized, white, or with a pale reddish-brown tint, margined above as well as below, so that each layer appears resupinate.—*M. J. B.*

789. Polyporus connatus. *Fr.* "Connate Polyporus."

Pileus between corky and woody, effuso-reflexed, imbricated, subzonate, confluent, velvety, white without and within; pores minute, roundish, white.—*Fr. Epicr. p. 472. Batt. t. 37. G.*

On old trunks of crab trees, &c., "running up them for one or two feet, often amongst moss."

c. Inodermei.

*Pileus at first dry
with a thin fibrous
subtle*

790. Polyporus radiatus. *Fr.* "Hazel Polyporus."

Pileus corky, coriaceous, rigid, radiato-rugose, at first velvety, tawny, then smooth, ferruginous brown; margin patent, repand; pores minute, pallid, silvery-shining, at length ferruginous.—*Fr. Epicr. p. 474. Sow. t. 190. Batt. t. 39. C. Eng. Fl. v. p. 143.*

On hazel stems.

[Up. Carolina.]

Tawny specimens of *P. versicolor* sometimes occur very much resembling this species, which is, however, altogether distinct.

791. Polyporus fibula. *Fr.* "Button Polyporus."

White; pileus coriaceous, tough, soft, hairy, substrigose, zoneless; margin entire, acute; pores rather small, round, acute, at length pallid.—*Fr. Epicr. p. 475. Sow. t. 387.*

On the door of a wine cellar.

Variable in form; pileus adnate behind. The usually recorded habitat is "branches of oak," &c.

792. Polyporus hirsutus. *Fr.* "Bristly Polyporus."

Pileus corky, coriaceous, convexo-plane, hairy with rigid bristles, zoned with concentric furrows, of one colour, whitish; pores round, obtuse, whitish, then brownish.—*Fr. Epicr. p. 477. B. & Br. Ann. N.H. (1866) no. 1139. Kl. exs. no. 810. Fckl. exs. no. 1378.*

On dead trunks. Near Twycross.

[United States.]

793. Polyporus velutinus. *Fr.* "Velvety Polyporus."

Pileus corky, coriaceous, plane, velvety, slightly zoned, white, at length yellowish; margin extenuated, acute; pores round, minute, slender, white.—*Fr. S. M. i. p. 368. Eng. Fl. v. p. 141. Kl. exs. ii. no. 701. Rabh. F.E. no. 15. Fckl. exs. no. 1377.*

On branches.

[Mid. Carolina.]

More or less imbricated. Pileus 2-3 in. broad, velvety, undulated, obscurely zoned, between corky and leathery; margin thinner than in *P. versicolor*, shrinking, and curling inwards when dried, colour various, whitish, with a cottony margin, yellowish fuscous, or brownish grey, the latter most common; pores whitish or yellowish, minute, round, very short, often disappearing towards the margin.—*Grev.*

794. Polyporus versicolor. *Fr.* "Common Zoned Polyporus."

Pileus coriaceous, thin, rigid, plane, depressed behind, velvety, nearly even and shining, variegated with coloured zones; pores minute, round, acute, and torn, white, then pallid.—*Fr. Epicr. p. 478. Sterb. t. 27, K. Batt. t. 35. A. Schæff. t. 268. Huss. i. t. 24. Eng. Fl. v. p. 141. Price, f. 127. Cooke exs. no. 303. Kl. exs. no. 120. ii. no. 209. Corda Anl. H.f. 75. Fckl. exs. no. 1375.*

On stumps, branches, &c. Common. [United States.]

Variable, sometimes quite resupinate, or with the margin reflexed, more generally dimidiate and densely imbricated, occasionally spuriously stipitate, more or less lobed, villous, marked with regular, concentric, smooth, shining zones of various colours, sometimes entirely white, and not unfrequently the whole surface is villous, and the zones mere depressions.—*M.J.B.*

795. Polyporus abietinus. *Fr.* "Whitish Fir Polyporus."

Pileus coriaceous, thin, effuso-reflexed, villous, obsoletely zoned, cinereous-white; pores unequal, torn, violaceous, then growing pallid.—*Fr. Epicr. p. 479. Grev. t. 526. Fl. Dan. t. 2079.f. 1. t. 1298. Eng. Fl. v. p. 141.*

On trunks of Coniferæ.

[United States.]

Pileus 1-2 in. across, sometimes entirely resupinate, with the exception of the extreme margin, and spreading over several inches, more generally effuso-reflexed, thin, coriaceous, zoned, whitish, often stained with minute green Algæ, more or less villous; pores very regular, lacinated, sometimes resembling hydroid teeth, more or less of a violet hue, which fades when past maturity.—*M.J.B.*

796. Polyporus Wynnei. *B. & Br.* "Wynne's Polyporus."

Confluent, various in form; pileus adnate behind, effuso-reflexed, then tan-coloured, marked with silky-raised lines; pores small, angular, white.—*Berk. Outl. p. 249. Ann. N.H. no. 807.*

Running over twigs, grass, &c. Rare.

Thin, incrusting various substances, with the margin more or less broadly reflected, tan-coloured, sericeous, and marked with raised lines; pores $\frac{9}{16}$ in. across, angular, white, acquiring a slight tint like that of the pileus in drying.—*B. & Br.*

Sect. 5. Resupinatus—Absolutely resupinate.

797. Polyporus contiguus. *Fr.* "Contiguous Polyporus."

Effused, firm, at first obscurely cinnamon, circumference vil-
lous or fibrous, then smooth, ferruginous; pores medium-sized,
equal, obtuse, entire.—*Fr. Epicr. p.* 483. *P. cellaris, Ann. N.H.*
no. 348. *Rostk. t.* 8. *Kl. exs. no.* 1007. *Desm. no.* 72.

On rotten wood and sticks.

[United States.]

798. Polyporus ferruginosus. *Fr.* "Rusty Polyporus."

Effused, firm, brown, when old bright brown, ferruginous, cir-
cumference sterile; pores elongated, nearly round, medium-sized,
cinnamon.—*Fr. Epicr. p.* 483. *Grev. t.* 155, *f.* 1. *Rostk. t.* 6. *Eng.*
Fl. v. p. 146.

On gate posts, &c. Common.

[United States.]

At first appearing under the form of a confervoid stratum, which gradually
thickens and acquires pores in the centre; generally wholly resupinate, but
occasionally slightly reflexed, in which case it is roughish and tomentose.
Pores minute, roundish, unequal; specimens sometimes occur many inches
in length, and in parts $\frac{1}{3}$ in. thick, from several individuals having become
confluent.—*M. J. B.*

799. Polyporus nitidus. *Fr.* "Yellow Polyporus."

Effused, thin, yellow, circumference of the interwoven my-
celium paler; pores minute, nearly round, short, saffron-yellow.
—*Fr. Epicr. p.* 483. *Pers. Obs. ii. t.* 4, *f.* 1. *Ann. N.H. no.* 349.

On dead wood. Rare.

[Low. Carolina?]

Crust-like, adnate.

800. Polyporus Armeniacus. *Berk.* "Buff Fir Polyporus."

Suborbicular, confluent, extremely thin, circumference mi-
nutely downy; pores at first white, then deep buff.—*Berk. Outl.*
p. 250. *Eng. Fl. v. p.* 147.

On the bark of firs. Appin.

Forming broadly effused patches, composed evidently of many confluent
orbicular individuals, circumference minutely downy. Pores shallow, minute,
nearly round, at first white, then bright buff, often confined to the centre,
the marginal portion being of a byssoid structure under a lens.—*M. J. B.*

801. Polyporus bombycinus. *Fr.* "Silky Polyporus."

Effused, membranaceous, of a silky texture, dingy-yellowish,
circumference byssoid, arachnoid, velvety below; pores large,

angular.—*Fr. Epicr. p.* 482. *Sow. t.* 387, *f.* 5. *Ann. N.H. no.* 350.

On dead wood.

802. Polyporus incarnatus. *Fr.* "Flesh-coloured Polyporus."

Effused, coriaceous, firm, smooth, flesh-coloured, pores rather long, unequal.—*Fr. Epicr. p.* 484. *Pers. M.E. t.* 16, *f.* 4. *Eng. Fl. v. p.* 146.

On decaying trunks of firs. Rare. [United States.]

Effused, irregular, thin, coriaceous, marginate, or immarginate; margin white, cottony, rather thick, as if there was a tendency to become reflexed. Pores minute, very short, round, sub-equal, straight or oblique, or of a fine flesh colour, approaching in some cases to orange. Sometimes small cottony protuberances occur amongst the pores, which have the appearance of small pilei, with tubes underneath.—*Grev.*

803. Polyporus violaceus. *Fr.* "Violet Polyporus."

Effused, determinate, agglutinate, thin, dark blood-red or violet; pores very short, cellulose, nearly round, obtuse, quite entire.—*Fr. Epicr. p.* 484. *Sys. Myc. i. p.* 379. *B. & Br. Ann. N.H.* 1865, *no.* 1021. *Fl. exs. no.* 715, *ii.* 502.

On prostrate fir-poles. Scotland.

Allied to *Merulius*, for which a young specimen might easily be taken.

804. Polyporus purpureus. *Fr.* "Purple Polyporus."

Broadly and widely effused, mycelium mucedinous, flocculose, white, creeping on the surface of the wood; pores short, minute, unequal, obtuse, interruptedly scattered or conglomerate, purple lilac.—*Fr. Epicr. p.* 484. *Rostk. t.* 3.

On decayed willow. Rare. [Mid. Carolina.]

805. Polyporus cinctus. *Berk.* "Banded Polyporus."

White, turning pallid, forming little scattered patches, each surrounded by radiating strigose fibres; pores extremely minute, angular; dissepiments extremely thin, edge ragged.—*Mag. Zool. & Bot. i. t.* 2, *f.* 3. *Berk. Outl. p.* 250.

On old deal boards. Rare. King's Cliffe.

At first this curious species consists of small erect scattered tufts of radiating strigose fibres. Many of these remain barren. Under favourable circumstances a distinct hymenium, $1\frac{1}{2}$ line thick, with a free, even, abrupt, vertical circumference, is formed in the centre of each tuft. Numbers of these at length become confluent. Pores so minute as to be scarce visible to the naked eye. The colour of the whole is pale ochraceous, more or less tawny when dry.—*M. J. B.*

806. Polyporus medulla-panis. *Fr.* "Crumb of Bread Polyporus.

Effused, determinate, sub-undulate, firm, smooth, white, circumference naked, sub-marginate, wholly composed of middle-sized, rather long, entire pores.—*Fr. Epicr. p.* 485. *Sow. t.* 387, *f.* 7. *Jacq. Misc. i. t.* 11. *Fl. Dan. t.* 2028, *f.* 1. *Letell. t.* 690, *f.* 1. *Bolt. t.* 166, *f.* 2? *Eng. Fl. v. p.* 146. *Fckl. exs. no.* 1369.

On decaying wood.

[United States.]

Effused, white, becoming yellowish in age, roundish, tolerably defined, dry, thickish, following in some degree the inequalities of the wood. Pores elongated, roundish, straight, or oblique, according to situation. Flesh almost none.—*Grev.*

807. Polyporus vitreus. *Fr.* "Glassy Polyporus."

Effused, sub-undulated, indeterminate, whitish, subhyaline, mycelium thin, separable, matted together; pores very small, round, long, obtuse, entire.—*Fr. Epicr. p.* 485. *Ann. N. H. no.* 351.

On decayed wood. Rare.

Distinguished by its distinct xylostomatoid sub-stratum, which separates easily from the matrix.—*B. & Br.*

808. Polyporus obducens. *Fr.* "Incrusting Polyporus."

Effused, incrusting, innate, firm, white, wholly composed of very small, crowded, equal pores, distinctly strатose, annual strata pallid tan colour.—*Fr. Epicr. p.* 485. *Ann. N. H. no.* 352. *Bisch. f.* 3294.

On rotten trunks. Bristol.

This species forms thick strata consisting of several layers, the growth of as many years.—*B. & Br.*

809. Polyporus vulgaris. *Fr.* "Common-effused Polyporus."

Broadly effused, thin, dry, closely adnate, even, white, circumference soon smooth, wholly composed of firm, crowded, small, round, nearly equal pores.—*Fr. Epicr. p.* 485. *Berk. Outl. t.* 16, *f.* 6. *Eng. Fl. v. p.* 146. *Fl. exs. no.* 619. *Fckl. exs. no.* 1366.

On dead wood and fallen branches.

[United States.]

Effused, sometimes to the breadth of one foot, smooth, not a line thick, nor to be separated from the wood without destroying it; margin when young very slightly pubescent. Pores straight or oblique, roundish.—*M. J. B.*

810. Polyporus viridans. Berk. & Br. "Greenish Polyporus."

Resupinate, effused, at first white, when dry pallid green; border pulverulento-tomentose, very thin; pores minute, angular; dissepiments thin.—*Ann. N.H. no. 347.*

On very rotten wood. Sept.

This pretty species has the habit of *P. vulgaris*.

811. Polyporus sanguinolentus. Fr. "Bleeding Polyporus."

Nodulose, soon confluent, effused, soft, whitish, blood-stained when touched; circumference byssoid, evanescent; pores small, subrotund, unequal, at length torn.—*Fr. Epicr. p. 486. Seem. Journ. Bot. vii. p. 61.*

On rotten wood.

[Low. Carolina.]

812. Polyporus molluscus. Fr. "Thin-pored Polyporus."

Effused, thin, soft, white; circumference byssoid, fibrilloso-radiate; pores in the centre, or here and there collected in patches, small, thin, round, unequal, and torn, growing pale.—*Fr. Epicr. p. 486. Fl. Dan. t. 1299. Sow. t. 387. f. 9. Eng. Fl. v. p. 147.*

On dead wood. Rare.

[Low. Carolina.]

At first forming a mere fringed byssoid membrane, which gradually acquires moderate, rigid, subrotund, and angular pores, the partitions of which are so thin that they very generally become lacerated.—*M. J. B.*

813. Polyporus Gordoniensis. B. & Br. "Gordon's Fir Polyporus."

Effused, superficial, membranaceous, very thin, but separable, persistently white; margin shortly fimbriate; pores minute, unequal, angular; dissepiments very thin, fimbriato-dentate.—*Ann. N.H. 1865, no. 1023.*

On fir poles. Aboyne Castle.

An extremely delicate species, and not in the slightest degree innate. The margin remains snow-white, and the pores themselves change colour only very slightly in drying.—*M. J. B.*

814. Polyporus terrestris. Fr. "Ground Polyporus."

Effused, arachnoid, byssoid, delicate, fugaceous, white; pores central, very small, white, then rufescent.—*Fr. Epicr. p. 486. Pers. Ic. Pict. t. 16. f. 1. Ann. N.H. no. 355.*

On naked soil or rotten wood. Rare.

815. Polyporus vaporarius. *Fr.* "Creeping Polyporus."

Effused, innate ; mycelium creeping over the wood, floccose, white ; pores large, angular, white, growing pallid, crowded into a close, firm, persistent stratum.—*Fr. Epicr. p. 487. Ann. N.H. no. 354. Cooke exs. no. 305.*

On fallen branches. Common. [United States.]

var. β. Separable, white, honey colour when dry.—*Ann. Nat. Hist. 1865. no. 1022*.*

A remarkable variety occurred with *Hydnum niveum* at Ascot, creeping over fir leaves and heath twigs quite shaded from the light, and differing from the common form in being of a pure white when fresh, changing when dry to honey yellow. The subiculum is filmy and separable.—*M. J. B.*

816. Polyporus aneirinus. *Fr.* "Waxy Polyporus."

Effused, thin, sub-innate ; circumference byssoid, white ; pores large, cellular, waxy, angular, smooth, white, becoming tawny.—*Fr. Epicr. p. 487. Ann. N.H. no. 353.*

On fallen twigs. Rare. [Low. Carolina.]

Distinguished by its large pores, the hymenium of which has a peculiar, smooth, waxy aspect.—*B. & Br.*

817. Polyporus corticola. *Fr.* "Changeable Polyporus."

Much effused, thin, circumference byssoid, thin, whitish ; pores various, angular, shining, whitish, then brownish-yellow.—*Fr. Epicr. p. 488. P. subfuscus-flavidus, Rostk. Sturm. no. 27, t. 11. B. & Br. Ann. N.H. 1865, no. 1022.*

On oak planks in the roof of King's Cliffe Church.

[S. Carolina, U.S.]

The pores appear, when viewed one way, of a greyish-brown, and the other white. Fries (*Mon. Hym.*) quotes the figure of Rostkovius, to which Berk. & Br. referred their specimens, under *Polyporus corticola*, *Fr.*

818. Polyporus Stephensii. *B. & Br.* "Stephens' Polyporus."

Orbicular, white, at length confluent ; margin sometimes slightly reflexed, tomentose ; pores broad, nearly equal, angular, dissepiments rather thick, edge villous.—*Ann. N.H. no. 356. Rabh. F.E. no. 117.*

On twigs of privet. Oct. West of England.

[Low. & Up. Carolina.]

Forming scattered orbicular white, or at length confluent resupinate patches about half an inch in diameter, which are sometimes slightly reflected with the free surface tomentose. Pores rather large, 1-20th in. broad, nearly equal, angular, sometimes sub-hexagonal; edge even, tomentose.—*B. & Br.* Spores very large, oval, white, $\cdot 00055 \times \cdot 00025$ in.

819. Polyporus Vaillantii. *Fr.* "Vaillant's Polyporus."

White, thin, mycelium free, forming strings, or united in a membrane; pores here and there conglomerated, short, rather large, thin, unequal.—*Fr. Epicr. p.* 487. *Sow. t.* 326. *Eng. Fl. v. p.* 147. *Vaill. t.* 8, *f.* 1.

On dead wood. Rare. Glasgow. [Up Carolina.]

Forming a thin, white, or slightly rufescent, byssoid, broadly effused, close membrane, here and there traversed by rooting ribs. — *Fries.*

820. Polyporus hybridus. *B. & Br.* "Dry-rot Polyporus."

White, mycelium thick, forming a dense membrane or creeping branched strings, hymenium breaking up into areas; pores long, slender, minute.—*Berk. Outl. xvii.* *Boletus hybridus, Sow. t.* 289, 387, *f.* 6.

On oak in ships, &c. The dry rot of our oak-built vessels.

Gen. 21.

TRAMETES, Fr.



Fig. 66.

Hymenophore descending into the trama of the pores without any change, which are permanently concrete with the pileus. Pores entire. (*Fig. 66.*)

Hymenophore descending unchanged into the trama of the pores, which is permanently similar to the substance of the pileus. Pores concrete with the pileus, at first very small, then open, obtuse, entire, equal, round or linear, not labyrinthiform, or lacerated. Corky or woody fungi, arboreal, always dimidiate, at first generally fragrant, and never acid.

821. Trametes pini. *Fr.* "Fir-trunk Trametes."

Pileus corky or woody, pulvinate, concentrically sulcate, cracked and pitted, rough, ferruginous brown, then blackish, tawny fer-

ruiginous within ; pores large, nearly round or oblong, yellow or reddish brown.—*Fr. Epicr. p.* 489. *Fl. Boruss. t.* 380. *Corda. Anl. t. H. f.* 75, no. 36, 37. *Kl. exs. ii. no.* 118. *Bail. t.* 31.

On pine trunks. Rare.

[Low. Carolina.]

Odour faint ; perennial.

822. *Trametes suaveolens.* Fr. "Sweet-scented Trametes."

Pileus corky, rather soft, pulvinate, villous, zoneless, white ; pores round, rather large, obtuse, brownish-white.—*Fr. Epicr. p.* 491. *Krombh. t.* 4, f. 25. *Fl. Dan. t.* 1849. *Tratt. Austr. f.* 4. *Fckl. exs. no.* 1365. *Bot. Zeit. (1859), t.* 11, f. 29. *Sow. t.* 228. *Sterb. t.* 27, *D. Dædalea suaveolens, Eng. Fl. v. p.* 133.

On willows, limes, &c.

Easily distinguished by its odour (when young), which resembles aniseed. White at first, then rufescent, zoned and scabrous, within dingy straw colour.—*Fries.* Spores white, oval, or pip-shaped, 0.00035×0.00018 in.

823. *Trametes odora.* Fr. "Small-pored Trametes."

Pileus corky, elastic, uneven, becoming smooth, zoneless, pallid ; pores minute, round, equal, whitish-ochre.—*Fr. Epicr. p.* 491. *Bolt. t.* 162.

On willows. Rare.

Very nearly related to *T. suaveolens*. It has the same smell. Spores white, oval, or pip-shaped, 0.00012×0.00022 in.

824. *Trametes gibbosa.* Fr. "Gibbous Trametes."

Dirty white. Pileus corky, villous, obsoletely zoned, expanded behind, gibbous ; pores linear, straight, equal.—*Fr. Epicr. p.* 492. *Bisch. f.* 3425. *Fckl. exs. no.* 1364. *Fl. Dan. t.* 1964. *Sow. t.* 194. *Huss. ii. t.* 4. *Dædalea gibbosa, Eng. Fl. v. p.* 133. *Strauss. Sturm. t.* 5.

On gate posts, &c. Sept. Rare.

Sessile, dimidiate, zoned, corky, hard, elastic, zones convex and tuberculated, dirty white, beautifully velvety, when old cinereous, and green from minute *Algae*, the edge obtuse or subacute, often projecting at the base and very gibbous, but not invariably so, substance white, pores linear, mostly straight, except at the base, where they are roundish or irregular, very narrow, pale tan.—*M. J. B.*

(Fig. 66, reduced, with section and spores.)

Gen. 22.

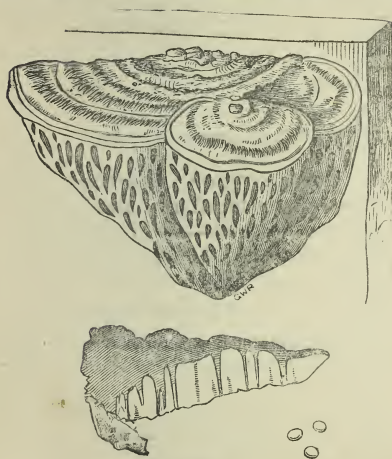
DÆDALEA, Fr. *Epicr.*

Fig. 67.

Hymenophore descending into the trama without any change; pores, when fully formed, torn, toothed, or labyrinthiform.

(Fig. 67.)

Hymenophore descending unchanged into the trama, which is firmer than in *Trametes*. Pores, when fully formed, labyrinthiform, lacerated, and toothed. In habit the species resemble *Trametes*, but they are inodorous, and must not be confounded with the species of *Polyporus* that have elongated curved pores.—W. G. S.

825. Dædalea quercina. P. "Oak Dædalea."

Pallid wood colour. Pileus corky, rugulose, uneven, zoneless, becoming smooth, of the same colour within; hymenium first porous, then broken into contorted or gill-like labyrinthiform sinuses; edge obtuse.—*Fr. Epicr. p.* 492. *Lenz. f.* 28, 29. *Sow. t.* 181. *Bolt. t.* 73. *Bull. t.* 352. *Berk. Outl. t.* 19. *f.* 5. *Eng. Fl. v. p.* 131. *Bail. t.* 31. *Fckl. exs. no.* 1362. *Gard. Chron.* (1860) *p.* 576, *fig.* *Bisch. f.* 3329. *Kromb. t.* 5, *f.* 1, 2. *Price, f.* 20. *Vent. t.* 60. *f.* 1, 2. *Grev. t.* 238.

On oak stumps, &c. Common.

Perennial. Pileus 5-6 in. broad, sessile, dimidiate, of a pale, woody appearance, smooth, marked with concentric, raised, or depressed zones and little, radiating wrinkles, the margin in well-grown specimens thin, but in ill-developed individuals swollen and blunt; gills of the same colour as the pileus, with sometimes a slight shade of pink, woody, thick, sinuous, branched, and anastomosing, so as to form long, wavy pores, a line or more broad. Sometimes the whole plant is resupinate or decurrent, and the partitions elongated into tooth-like processes.—*M. J. B.*

(Fig. 67, reduced, with section and spores.)

826. Dædalea confragosa. P. "Willow Dædalea."

Pileus corky, coriaceous, rather convex, rough, subzonate, self-coloured, reddish-brown, somewhat ferruginous within; hy-

menium porous, then narrowly labyrinthiform and torn, pruinose, cinereous, then reddish brown.—*Fr. Epicr. p.* 493. *Bolt. t.* 160. *Bull. t.* 491. *Sow. t.* 193. *Eng. Fl. v. p.* 132. *Ann. N.H. no.* 279. 711*.

On willows, service, &c. Rare.

827. Dædalea unicolor. *Fr.* "One-coloured Dædalea."

Pileus corky, coriaceous, villosa-strigose, cinereous, with zones of the same colour; sinuses labyrinthiform, flexuose, intricate, acute, at length torn and toothed.—*Fr. Epicr. p.* 494. *Sow. t.* 325. *Eng. Fl. v. p.* 133. *Fckl. exs. no.* 1363. *Kl. exs. no.* 28. ii. no. 614. *Fl. Dan. t.* 2271. f. 1.

On stumps, &c. Common. [United States.?

Imbricated. Pileus 2-4 in. broad, coriaceous, zoned, densely villous, often green from minute *Algæ*; pores narrow, small, irregular, unequal, subflexuous.—*M. J. B.*

828. Dædalea latissima. *Fr.* "Effused Dædalea."

Effused, between corky and woody, thick, undulated, rufescent or pallid wood colour; pores thin, distant, very obtuse, somewhat rounded and elongated, flexuose.—*Fr. Epicr. p.* 495. *Sow. t.* 424. *Eng. Fl. v. p.* 133.

On dead branches on the ground. Rare.

Gen. 22. MERULIUS. *Fr. Syst. Myc.*

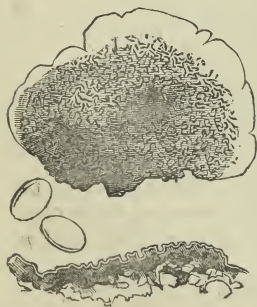


Fig. 68.

Hymenium soft, waxy, forming porous, reticulate, or sinuous, toothed folds. (*Fig. 68.*)

Hymenophore covered with the soft, waxy hymenium, which is incompletely porous, or arranged in reticulate, sinuous, dentate folds. Epixylous fungi, at first resupinate, expanded; the hymenophore springing from a mucous mycelium.

A. Leptospori—spores white.**829. Merulius tremellosus.** *Schrad.* "Tremellose Merulius."

Resupinate, then free or reflexed, fleshy, tremelloid, tomentose, white; margin dentato-radiate; folds porous, variable pinkish.—*Fr. Epicr. p.* 500. *Fl. Dan. t.* 1553, 776. *f.* 1. *Ann. N.H. no.* 77. *Huss. i. t.* 10. *Fckl. exs. no.* 1358. *Ann. Sc. Nat.* 1837. *viii. t.* 10. *f.* 22. *Bail. t.* 30. *Kl. exs. ii. no.* 7. *Boletus arbo-reus*, *Sow. t.* 346. *Bisch. f.* 3447.

At the base of decayed trees. Rare. Oct. [United States.]

"Sometimes the edge is beautifully tinged with pink."

830. Merulius corium. *Fr.* "Leathery Merulius."

Resupinate, effused, soft, somewhat papyraceous, circumference at length free, reflexed, white, and villous below; hymenium reticulato-porose, flesh-coloured, or pallid tan-colour.—*Fr. Epicr. p.* 500. *Grev. t.* 147. *Bull. t.* 402. *Sow. t.* 349. *Eng. Fl. v. p.* 128. *Fckl. exs. no.* 1359. *Berk. exs. no.* 19. *Kl. exs. no.* 1916.

On dead trunks. Common. [United States.]

Plant 2-3 in. broad, sometimes completely effused with a white byssoid margin, but not unfrequently the margin, or even the whole pileus, is regularly reflexed, often imbricated, white, pubescent, and zoned above, below pale buff or lilac, variously sinuato-rugose or reticulato-porous, very various in thickness, being sometimes a mere pellicle, while on the contrary individuals occur as thick as *Stereum hirsutum*.—*M. J.B.* Spores oval, vivid orange, 0.0018×0.0023 in.

831. Merulius himantoides. *Fr.* "Fibrous Merulius."

Effused, silky, very soft, fibrous, silky beneath, lilac; circumference byssoid; folds porous, then gyrose, dirty yellow, at length inclining to olive.—*Fr. Epicr. p.* 501. *Pers. M.E. t.* 13. *f.* 3, 4. *Sow. t.* 346. *Br. Bath. Trans.* 1870. *p.* 84.

On fir wood, and on club mosses in a conservatory.

Similar to *M. lacrymans*, but thinner.

832. Merulius aurantiacus. *Klotzsch.* "Orange Merulius."

Pileus tough, carnosio-coriaceous, effuso-reflexed, zoned, tomentose, between yellow and dirty white, here and there cinereous; folds minute, subporiform, dull orange.—*Berk. Outl. p.* 256. *Eng. Fl. v. p.* 128.

On dead beech. May. Rare. Scotland.

Pileus 1 in. broad; zones obsolete, hirsuto-tomentose. Nearly allied to *M. corium*.—*M. J.B.*

833. Merulius molluscus. Fr. "Thin Merulius."

Effused, thin, soft, membranaceous; margin byssoid, white; folds poroso-gyrose, flesh-coloured.—*Fr. Epicr. p. 501. Pers. M.E. t. 14. f. 1, 2. Ann. N.H. no. 712.*

On dead wood. Rare. Penzance. [Mid. Carolina.]

Hymenium dark brown when old; sometimes shortly reflexed, and then the hymenium not reticulated, but from the first gyrose and toothed.

834. Merulius porinoides. Fr. "Porose Merulius."

Crustaceous, adnate, thin, circumference byssoid, white, folds poriform, distant, dirty yellow.—*Fr. Epicr. p. 501. Pers. M.E. t. 14, f. 7. Ann. N.H. no. 358.*

On dead wood, chips, &c. Rare. [United States.]

835. Merulius rufus. P. "Rufous Merulius."

Crustaceous, adnate, smooth, flesh-red, circumference almost naked, hymenium equally porous, of the same colour.—*Fr. Epicr. v. 502. Pers. M.E. t. 16, f. 1, 2. Ann. N.H. no. 357.*

On fallen oak boughs. [Mid. Carolina.]

"This has a very Polyporus-like appearance, and I am not certain that it is anything more than a state of *Dædalea confragosa*, of which I believe *Trametes rubescens* is a synonym."—*M. J. B.*

836. Merulius serpens. Fr. "Creeping Merulius."

Crustaceous, adnate, thin, becoming smooth, pallid, then reddish, circumference byssoid, white, folds at first wrinkled, then porous, angular, entire.—*Fr. Epicr. p. 502. Fckl. exs. no. 2096. Kl. exs. no. 1006, ii. no. 6.*

On dead wood. Rare. Twycross. [Low. & Mid. Carolina.]

Not separable like *M. corium*.

837. Merulius pallens. Berk. "Pallid Merulius."

Adnate, thin, inseparable, pale-reddish, fleshy, subgelatinous, folds poriform, minute; margin indeterminate.—*Ann. N. Hist. ser. i. vol. vi. p. 358, no. 151. Berk. Outl. p. 256.*

On fir wood. Rare.

838. Merulius Carmichaelianus. Berk. "Carmichael's Merulius."

White, extremely thin, forming effused, entirely resupinate, irregular, interrupted, confluent patches; folds forming regular

angular reticulations, dull brown when dry.—*Berk. Outl. p. 256. Grev. t. 224. Eng. Fl. v. p. 130.*

On bark. Rare. Appin.

This minute species forms a mere pellicle, in its dry state of a uniform dull brown, scarcely distinguishable from the bark on which it grows, but when examined with a moderate magnifying power the regular, often hexagonal reticulations, exhibit a very elegant appearance, like the cells of a honey-comb, but quite superficial.—*M. J. B.*

B. Coniophori—spores ferruginous.

839. Merulius lacrymans. Fr. "Dry-rot Merulius."

Large, fleshy, spongy, moist, ferruginous yellow, arachnoid and velvety beneath; margin tumid, tomentose, white; folds broad, porous, and gyroso-dentate.—*Fr. Epicr. p. 502. Fl. Dan. t. 2026. Krombh. t. 46, f. 1-2. Sow. t. 113. Jacq. Misc. t. 8, f. 2. Berk. Outl. t. 2, f. 1. Huss. i. t. 3. Eng. Fl. v. p. 129. Strauss. Sturm. t. 4. Price, f. 30. Fckl. exs. no. 1361. Payen. f. 484. Kl. exs. no. 228.*

In cellars, hollow trees, &c. Common. [Mid. Carolina.]

Whole plant generally resupinate, soft, tender, at first very light, cottony and white; when the veins appear they are of a fine yellow-orange, or reddish-brown, forming irregular folds, most frequently so arranged as to have the appearance of pores, but never anything like tubes, distilling, when perfect, drops of water. Sometimes the pileus, or substance of the plant, from its situation, produces pendant processes like inverted cones.—*Grev.* Spores ferruginous. Spores oval, rich, orange-brown, $\cdot 00035 \times \cdot 00023$ in.

(*Fig. 68.*)

Gen. 26. POROTHELIUM, Fr. Obs.



Fig. 69.

Hymenophore arachnoid, covered with distinct papillæ, at first closed, then open like pores. (*Fig. 69.*)

Hymenophore mycelioid, covered with papillæ, which are at first distinct and closed, soon opening into pores, which become elongated and tubular. Submembranaceous, resupinate fungi.

840. Porothelium Friesii. Mont. "Fries' Porothelium."

Effused, confluent, flocculoso-membranaceous, white, inclined to tan colour, circumference simple, papillæ immersed, yellowish,

at length open and urceolate.—*Fr. Epicr. p. 504. Ann. des. Sc. Nat. (1836), vol. v. p. 339. Ann. N.H. no. 359.*

On pine wood. Rare.

Pores often crowned with a pellucid drop.

(*Fig. 69.*)

Gen. 27.

FISTULINA, Bull. Champ.

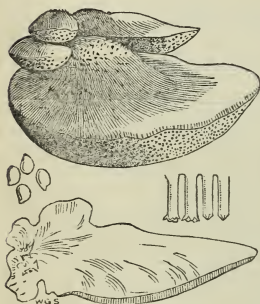


Fig. 70.

Hymenophore fleshy. Hymenium inferior, at first papillose; the papillæ at length elongated, and forming distinct tubes.

(*Fig. 70.*)

Epixylous fungi, intermediate between *Poly-porei* and *Hydnei*.

841. *Fistulina hepatica*. “Liver *Fistulina*.”

Fleshy, juicy, rootless; pileus undivided, blood-red; tubes yellowish.—*Fr. Epicr. p. 504. Schaff. t. 116-120. Sow. t. 58. Rog. t. 2. f. 4. Bail. t. 29. Kl. exs. no. 1404. Fl. Dan. t. 1039. Grev. t. 270. Lenz. f. 40. Krombh. t. 5. f. 9, 10. t. 47. f. 1-12. Vitt. t. 36. Paul. t. 12. Cooke B.F. t. 18. Badh. i. t. 12. f. 4. ii. t. 12. f. 2. Berk. Outl. t. 17. f. 1. Huss. i. t. 65. Smith E.M. f. 21. Price, f. 22. Eng. Fl. v. p. 154. Gard. Chron. (1861) p. 121. Trans. Woolh. Cl. 1869. Hogg. & Johnst. t. 7. Barla. t. 30. f. 4-7. Vent. t. 36. f. 1, 2. Fckl. exs. no. 1357.*

On trunks of old oaks. Common. Esculent. [Up. Carolina.]

Pileus roundish, dimidiate, or subspathulate, in general more or less concave, studded with minute, stellate, furfuraceous tufts, the rudiments of tubes, rich red-brown, tinged with vermillion, sometimes substipitate; margin obtuse, substance thick and juicy, marbled like beet-root, distilling a red pellucid juice from different parts of the plant; hymenium convex, elegantly tinted with shades of red or vermillion, dotted with rose-like somewhat remote, radiated warts, which form a veil to the young tubes; as the pileus expands the tubes elongate and become approximate, and are jagged at their orifices. Taste rather acid. It attains sometimes an enormous size, even nearly 30 pounds in weight.—*Eng. Fl.* Spores salmon colour, nearly round, with an oblique apiculus, diameter .00013 in. (*Fig. 70, reduced.*)

Order III. HYDNEI.

Hymenium inferior, or amphigenous, at first definitely protruberant, spread over persistent spines, bristles, teeth, tubercles, or papillæ.—*Fr. Epicr. p. 504.*

- Hymenium of awl-shaped spines, distinct at the base . . . *Hydnum.*
 Hymenium of gill-like teeth —
 Irregularly distributed, distinct from pileus . . . *Sistotrema.*
 Disposed in rows, concrete with pileus . . . *Irpex.*
 Hymenium waxy—
 Of irregular tubercles *Radulum.*
 Of crest-like wrinkles or veins *Phlebia.*
 Of obtuse equal granules *Grandinia.*
 Subiculum fibrous, with crested, papillose, or spiny
 warts *Odontia.*

Gen. 28. HYDNUM, Linn.



Fig. 71.

Hymenium inferior, aculeate; spines at first papillæform, awl-shaped, or compressed, distinct at the base.—*Fr. Epicr. p. 505.* (Fig. 71.)

Sect. 1. Mesopus—entire, simple; stem central. Terrestrial.

A. Carnosa—pileus fleshy, subfragile. Edible.

* Spines coloured.

842. Hydnum imbricatum. L. "Imbricated Hydnum."

Pileus fleshy, nearly plane, sub-umbilicate, tessulato-squamosa, floccose, not zoned, umber; stem short, even; spines decurrent, whitish cinereous.—*Fr. Epicr. p. 505. Schæff. t. 140. Fl. Dan. t. 176, 1500. Krombh. t. 49. f. 1-6. Lenz. f. 50. Grev. t. 71. Cooke B. F. t. 16, f. 1. Kl. exs. no. 127. Eng. Fl. v. p. 155. Nees, f. 240. Barla. t. 38. f. 1-4. Harz. t. 3. b. Bisch. f. 3244. Bail. t. 29.*

On the ground, in pine woods. Esculent.

[Mid. & Up. Carolina.]

Pileus 2-5 in. broad, thick and fleshy, plane, or slightly convex, and rounded at the margin, at length somewhat hollowed in the centre, varying from reddish to mouse-brown, scaly; scales imbricated, numerous, the central ones being often mere cracked portions of the pileus, which render that part tessellated; flesh pale-buffish or reddish; spines entire, numerous, very short, of nearly equal length, greyish-white; stem 1-2 in. thick, firm, irregular, whitish.—*Grev.* Spores round, tuberculated, pale yellowish, brown, $\cdot 00025 \times \cdot 0002$ in.

843. Hydnum fragile. *Fr.* "Fragile Hydnum."

Pileus fleshy, fragile, sub-repand, undulate and lobed, at first pubescent, then nearly smooth, commonly even, but sometimes minutely squamulose, at first pallid, then cinereous or brick-red; margin and flesh grey, somewhat zoned; stem unequal, short and thick, or elongated; spines scarcely decurrent, much elongated, slender, very fragile, whitish, then grey.—*Fr. Mon. H.S. ii. p. 275. Bergeret. i. t. 13. B. & Br. Ann. N.H. 1865, no. 1024.*

Amongst heath. Ascot.

This fine species, which attains a diameter of several inches, was included in *Fr. Sys. Myc.* under *H. lævigatum*, from which it is now very properly separated.—*M. J. B.*

** Spines immutable, whitish.

844. Hydnum repandum. *L.* "Spreading Hydnum."

Pileus fleshy, compact, subrepand, nearly smooth, pallid; stem deformed, pallid; spines unequal, of the same colour.—*Fr. Epicr. p. 506. Fl. Dan. t. 310. Roq. t. 2, f. 2. Harz. t. 23. Bisch. f. 3430. Sow. t. 176. Schæff. t. 318. Krombh. t. 50, f. 1-9. Vitt. Mang. t. 25, f. 2. Paul. t. 35. Cooke, B.F. t. 16, f. 2. Berk. Outl. t. 17, f. 2. Badh. i. t. 12, f. 3, ii. t. 8, f. 3, 4. Vent. t. 27, f. 4-6, t. 28, f. 1, 2. Smith, E.M. f. 22. Huss. i. t. 16. Eng. Fl. v. p. 155. Grev. t. 44. Bull. t. 172. Berk. exs. no. 141. Gard. Chron. (1860), p. 121, fig. Trans. Woolh. Cl. 1869. Barla. t. 32, f. 1-9.*

var. rufescens. *Fr.* Entire plant reddish.—*Fr. Epicr. p. 506. Bolt. t. 89. Schæff. t. 141.*

On the ground, in woods. Common. [United States.]

Subgregarious; pileus 2-4 in. broad, the margin more or less arched, very irregular in form, often excentric, or even laterally stipitate, more or less lobed or undulated, buffish or subru'escens, smooth, or frequently decidedly tomentose; spines unequal, conical, entire, or sometimes bifid or laciniated, and even compressed and lamellated, sometimes forming spurious pores.

Stem $1\frac{1}{2}$ -3 in. high, 1 in. thick, solid, paler than the pileus, sometimes clothed with white down, and at the apex with abortive spines.—*M. J. B.* Spores white, or with a suggestion of yellow, round, with an obtuse apiculus at one end. Diameter .00022 in. (*Fig. 71, reduced.*)

B. *Lignosa*—pileus corky or coriaceous.

* Spines discoloured; spores brownish.

845. *Hydnum compactum*. Fr. "Compact Hydnum."

Pileus corky, compact, undulato-tuberculose, without zones, olivaceo-cinereous or brownish, commonly involved in whitish down, internally variegated with blue; stem very short, deformed, tawny-brown; spines brownish, pallid at the tips.—*Fr. Epicr. p. 507. Krombh. t. 50, f. 12. Str. Sturm. t. 7. Batsch. f. 221. Eng. Fl. v. p. 156. Rabh. F.E. no. 803. Vent. t. 28, f. 3, 4.*

On the ground, on heaths, and fir woods. Rare.

[Low. & Mid. Carolina.]

Irregular, confluent inodorous, resembling a thick, shapeless crust. Pileus 1-6 in. broad, thick, readily imbibing moisture, clotted with down of the same colour, or dirty white. Spines equal, chestnut; stem corky, obsolete or very thick.—*Fries.*

** Spines discoloured; spores ferruginous.

846. *Hydnum zonatum*. Batsch. "Zoned Hydnum."

Ferruginous; pileus equally coriaceous, thin, expanded, sub-infundibuliform, zoned, becoming smooth, radiato-rugose; margin paler, sterile; stem slender, nearly equal, floccose, tuberous at the base; spines slender, pallid, then of the same colour as the pileus.—*Fr. Epicr. p. 509. Kl. exs. no. 1715. Batsch. f. 224. Nees, f. 242. Ann. N.H. no. 360.*

In woods. Rare.

[United States.]

A small variety has been found at Ascot, remarkable for an appearance in the spines like that of shot silk. Spores ferruginous.—*B. & Br. Ann. N.H. 1865, no. 1025.*

** Spines immutable; spores whitish.

847. *Hydnum nigrum*. Fr. "Black Hydnum."

Pileus corky, rigid, tomentose, zoneless, blue-black, within and the stout stem black; margin and spines white.—*Fr. Epicr. p. 509. Mich. t. 72, f. 5. Batsch. f. 223. Seem. Jour. 1868, p. 334. Fr. Icones. t. 5. Br. Bath. Trans. 1870, p. 86.*

In pine woods, &c. Street, Somerset.

Inodorous, woody. Pileus unequal, flattened or depressed, with a whitish margin. Spines slender, equal, becoming cinereous. Very distinct, and easily recognised by its black, zoneless flesh. Spores white, round, papillose, diameter $\cdot 00017$ in. In my specimens of this species the pileus is distinctly zoned, as it is in Fries' own figure in his recently published *Icones*.—*W. G. S.*

848. *Hydnum graveolens.* Del. "Strong-scented *Hydnum*."

Pileus coriaceous, thin, soft, not zoned, rugose, dark-brown, brown within; margin becoming whitish; stem slender; spines short, grey.—*Fr. Epicr. p.* 509. *Ann. N.H. no.* 280. *Rabh. F.E. no.* 1004. *Fr. Icon. t.* 6, *f.* 1.

In woods. Rare.

[United States.]

When fresh it is extremely beautiful, being dark in the centre with a white border. The spines are pale, and the spores evidently white. The whole plant smells extremely strong of melilot, and after it has been dried three or four years the scent is as strong as ever.—*B. & Br.*

849. *Hydnum tomentosum.* L. "Tomentose *Hydnum*."

Pileus coriaceous, thin, plano-infundibuliform, zoned, pale cinereous; stem slender, of the same colour; disc tomentose; margin and spines white.—*Fr. Epicr. p.* 510. *Schæff. t.* 139. *Kl. exs. no.* 123. *Fl. Dan. t.* 1020, *f.* 2. *B. & Br. Ann. N.H.* 1865, *no.* 1025. *Seem. Jour.* 1868, *t.* 76. *Harz. t.* 3. *a.*

In fir woods. Ascot.

[Mid. Carolina.]

They have a strong smell of melilot, but differ from *H. graveolens* in the strongly zoned pileus, more coriaceous substance, and in the white (not grey) spines. The spores are thrown down in abundance on any subjacent objects. Spores white, globular, rough, or papillated, diameter $\cdot 00013$ in.

Sect. 2. Pleuropus—sub-dimidiata; stem lateral.

850. *Hydnum auriscalpium.* L. "Fir-cone *Hydnum*."

Pileus dimidiata, coriaceous, reniform, hairy, bright brown, inclining to black; stem slender, rooting, hairy, of the same colour; spines tough, bright brown.—*Fr. Epicr. p.* 511. *Schæff. t.* 143. *Fl. Dan. t.* 1020, *f.* 1. *Grev. t.* 196. *Krombh. t.* 50, *f.* 15-17. *Eng. Fl. v. p.* 156. *Bull. t.* 481, *f.* 3. *Sow. t.* 267. *Cooke exs. no.* 306. *Bisch. f.* 3284. *Schnzl. t.* 16, *f.* 33-35. *Kl. exs. no.* 126.

On fir cones. Common.

Pileus $\frac{1}{2}$ -1 in. broad, subrotund, thin, coriaceous, often somewhat lobed, the margin of the lobes entire, more or less zoned, tomentose, purplish, or reddish-brown, sometimes pale; spines subcinereous, or a dilute shade of

the pileus, the tips often darker, but not always so, more or less hoary from the spores. Stem buried to some depth amongst fir-leaves, 2-3 in. high, often confluent, slender, dark brown tomentose, attached by a shaggy or spongy base.—*M. J. B.*

Sect. 3. Merisma—much branched or tuberculiform, immarginate.

* Much branched or palmate.

851. *Hydnum coralloides.* Scop. “Coral-like *Hydnum*.”

Very much branched, white, at length yellowish, broken up into intricate attenuated branches; spines unilateral, subulate, entire.—*Fr. Epicr. p.* 511. *Schæff. t.* 142. *Sow. t.* 252. *Lenz. f.* 53. *Krombh. t.* 51, *f.* 4-7. *Eng. Fl. v. p.* 157. *Bull. t.* 390. *Bisch. f.* 3393. *Kl. exs. no.* 125.

On decayed fir, beech, ash, &c. Rare. Esculent.

[United States.]

Young plant, according to Persoon, resembling a cauliflower; when old it forms tufts, a foot or more in length, with flexuous, angular branches, beset with incurved ramuli bearing spines on the under side.

** Tuberculiform, immarginate.

852. *Hydnum erinaceus.* Bull. “Hedgehog *Hydnum*.”

Fleshy, tough, elastic, pendulous, tuberculose, immarginate, white, then yellowish, torn into fibrils above; spines very long, straight, equal, pendulous.—*Fr. Epicr. p.* 512. *Bull. t.* 34. *Vitt. t.* 26. *Krombh. t.* 51, *f.* 1-3. *Eng. Fl. v. p.* 157. *Tratt. Essb. t.* Y.

On trunks of oak, beech, &c. Rare. [United States.]

Pileus a span or more broad, the base projecting, soft, torn into subfasciculate fibrillæ (abortive spines); margin obtuse, gradually giving out true spines, often imbricated with smaller pilei; spines $1\frac{1}{2}$ - $2\frac{1}{2}$ in. long, pendulous, thick set, very regular, soft, equally attenuated, connected two or three together at their bases, fastigate; substance thick, tough, fleshy, very soft, elastic, white, not changing colour.—*Fries.* Spores white, plain, 00019×00023 in.

853. *Hydnum caput-medusæ.* Bull. “Medusa-head *Hydnum*.”

Fleshy, tuberculiform, substipitate, white, then cinereous; upper spines distorted, lower spines fertile, long, straight.—*Fr. Epicr. p.* 512. *Bull. t.* 412.

On trunks of trees. Rare. Esculent. [United States.]

Large and fleshy, at first snowy-white, then dingy-cinereous; stem dilated into the pileus; all the spines at first straight, slender, long, the upper ones at length bent and contorted.

Sect. 4. Apus—pileus marginate, dimidiate, sessile, commonly effuso-reflexed. On trunks.

* Pileus gelatinous.

854. Hydnum gelatinosum. Scop. "Gelatinous Hydnum."

Pileus gelatinous, tremulous, dimidiate, substipitate, papillate, glaucous, turning brown; spines soft, pyramidal, glaucous.—*Fr. Epicr. p. 512. Schæff. t. 144. Jacq. Austr. t. 239. Fl. Dan. t. 717. Krombh. t. 50, f. 18-22. Jacq. Misc. i. t. 9. Gard. Chron. (1860), p. 1080, fig. Ann. N.H. no. 808. Curr. Linn. Journ. v. p. 181.*

On trunks of firs. Rare.

[United States.]

Of a soft gelatinous consistence approaching that of a *Tremella*. Pileus fan-shaped, or rounded in front, attenuated behind so as to make a short spurious stem. In an early stage it is decurrent at the point of attachment. The surface is of a bistre brown, uneven with frequent depressions, and rough at first with little points, but at length nearly smooth. The hymenium is either pure white or shaded with a delicate blue tint, the spines straight, of moderate length, and very delicate. The plant shrinks much in drying.—*M. J. B.* Translucent like opal, gelatinous, soft, flaccid; spines white; pileus frosted with shining particles; taste pleasant. Spores round, somewhat irregular, white, diameter .00027 in.—*W. G. S.*

** Pileus corky or coriaceous.

855. Hydnum ochraceum. P. "Ochrey Hydnum."

Pileus effuso-reflexed, coriaceous, thin, zonate, ochraceous; spines minute, pinkish-ochre.—*Fr. Epicr. p. 514. Sow. t. 15. Eng. Fl. v. p. 158.*

On fallen sticks, &c. Common.

[United States.]

Small, at first entirely resupinate, gradually reflexed, and somewhat expand, at first sparingly clothed with dirty-white down, at length rugose, 1-3 in. broad. Spines short, acute, entire, becoming pale.—*Fries.*

Sect. 5. Resupinatus—pileus resupinate.

* Spines brown or ferruginous.

856. Hydnum squalinum. Fr. "Coarse Hydnum."

Subiculum, coriaceous, firm, adnate, wood-coloured; spines crowded, long, stout, compressed, entire, at length brownish.—*Fr. Epicr. p. 515. Ray. Syn. t. i. f. 5. Bolt. t. 74.*

On trunks of trees, especially beech.

Admitted on the authority of the figures of Ray and Bolton.

857. Hydnum membranaceum. *Bull.* "Membranaceous Hydnum."

Subiculum, effuse, waxy-membranaceous, agglutinate, smooth, tawny-ferruginous; spines subulate, crowded, equal, acute, of the same colour.—*Fr. Epicr. p.* 515. *Bull. t.* 481, *f.* 1. *Sow. t.* 327. *Eng. Fl. v. p.* 158. *Berk. exs. no.* 142. *Corda. Anl. t. G., f.* 74, *no.* 10, 11.

On fallen sticks.

[United States.]

The spines are often collected in little fascicles, pallid when young, at length brownish.

858. Hydnum Weinmanni. *Fr.* "Weinmann's Hydnum."

Subiculum, effused, waxy, membranaceous, agglutinate, smooth, greyish, fawn-coloured; spines minute, acute, rather distant, equal.—*Fr. Epicr. p.* 516. *Pers. M.E. t.* 22, *f.* 2. *Ann. N.H. no.* 713.

On fallen branches. Bristol.

According to Fries this species occurs chiefly on poplar branches, and when dry acquires a cinereous tinge.

859. Hydnum fuscum. *P.* "Brown Hydnum."

Effused, rufous-brown; circumference paler, coarsely byssoid; spines long, quite entire, close, very acute, shining as if varnished.—*Pers. M.E. ii. t.* 17, *f.* 3. *Eng. Fl. v. p.* 158.

On dead wood. Rare.

In its dry state it is rather thicker than other effused species, and is remarkable for the long, dark, rufous-brown spines, which shine as if varnished.—*M. J. B.*

860. Hydnum ferruginosum. *Fr.* "Rusty Hydnum."

Subiculum effused, tomentose, tawny-ferruginous; spines crowded, conico-subulate, acute, of the same colour.—*Fr. Epicr. p.* 516. *Schrad. Spic. t.* 4, *f.* 2. *Nees. f.* 248. *Eng. Fl. v. p.* 158. *Purt. t.* 15.

On decaying wood.

[United States.]

The whole plant consists of densely woven down, forming an effused, indeterminate mass, the hymenium composed of erect or oblique spines, which are villous and frequently abortive, so as easily to be taken for some species of the order *Hyphomycetes*. The colour varies from ferruginous to brownish.—*M. J. B.*

861. Hydnum variecolor. P. "Varicoloured Hydnum."

Subiculum effuse, adnate, furfuraceo-crustaceous, white; spines crowded, conical, short, unequal, minute, brownish.—*Fr. Epicr. p. 516.*

On dead stumps. Rare.

Somewhat similar to *Hyd. farinaceum*. The spines are usually adpressed.

** Spines yellowish or greenish.

862. Hydnum alutaceum. Fr. "Tan-coloured Hydnum."

Subiculum longitudinally effuse, crustaceous, adnate, smooth, pallid ochraceous, circumference naked; spines minute, crowded, equal, acute.—*Fr. Epicr. p. 516. Ann. N.H. no. 714.*

On dead wood. Rare. [Mid. Carolina.]

It has the colour and appearance, at first, of *Grandinia granulosa*, from which, however, it is quite distinct.

863. Hydnum spathulatum. Fr. "Spoon-shaped Hydnum."

Subiculum effused, membranaceous, seceding, whitish or yellowish, circumference fimbriate; spines spathulate, oblique, orange.—*Fr. Epicr. p. 517. Ann. N.H. no. 281.*

On decaying wood. Rare. [Mid. Carolina, U.S.]

The whole plant separates easily from the wood, and the teeth are broad and spathulate, by which characters it is readily distinguished.—*B. & Br.*

* * Spines flesh-coloured, lilac, or rufescent.

864. Hydnum udum. Fr. "Moist Hydnum."

Subiculum effused, thin, subgelatinous, agglutinate, smooth, flesh-coloured, then watery yellow; spines crowded, unequal, forked and fimbriate, of the same colour.—*Fr. Epicr. p. 517. Berk. Outl. t. 17. f. 3. Eng. Fl. v. p. 160.*

On fallen branches. [Low and Mid. Carolina.]

Forming elongated patches 4-5 in. long. When dry yellowish towards the margin, the more central parts being of a pale fawn-colour.—*M. J. B.*

** Spines white.

865. Hydnum niveum. P. "Snowy Hydnum."

White; subiculum effused, thin, membranaceous, adnate, circumference byssoid; spines crowded, short, equal, smooth.—

Fr. Epicr. p. 518. *Pers. Disp. t.* 4. *f.* 6, 7. *Nees. f.* 246. *Ann. N.H. no.* 361.

On dead wood, leaves, &c. Rare. Bristol.

var. Persistenter niveum. Teeth compressed.

Running over shaded twigs of heath near the ground, in little membranaceous films. Ascot.

This does not become so yellow in drying as specimens from other localities. The patches are only a few lines across.

866. *Hydnum farinaceum.* P. "Mealy Hydnum."

White; subiculum effused, indeterminate, farinoso-crustaceous; circumference somewhat flocculose; spines slender, subdistant, very acute and entire.—*Fr. Epicr. p.* 519. *Fl. Dan. t.* 1375. *Eng. Fl. v. p.* 158. *Kl. exs. no.* 623.

On decayed wood.

[United States.]

Forming thin, effused patches, resembling scattered meal, beset with distant, acute spines.

867. *Hydnum argutum.* Fr. "Spongy Hydnum."

White; subiculum effused, spreading, tomentose, interwoven, adnate; spines acute, subulate, unequal, serrate or toothed.—*Fr. Epicr. p.* 519. *Roth. Ust. Ann. i. t. i. f.* 5. *B. & Br. Ann. N.H. 1865, no.* 1026.

On wood and bark. Sept. Bodelwyddan. Twycross.

The distinctive character seems to reside in the spongy subiculum, which consists of rather strong perpendicular threads. The spores are large and subglobose.

868. *Hydnum plumosum.* Duby, "Feathered Hydnum."

Snow-white, downy; subiculum very delicate; spines divided, feathered at the apex.—*Duby. Bot. Gall. ii. p.* 778. *Berk. Outl. p.* 261.

On dead wood. Rare. Lambley, Notts. [Low. Carolina.]

Distinguished by the peculiar feathered apex of the spines. An anomalous species referred to this genus by Duby with doubt.

Gen. 29.

SISTOTREMA, Fr. Sys. Myc.

Fig. 72.

Hymenium spread over gill-like, somewhat waxy teeth, irregularly distributed, distinct from the pileus, and easily separable.—*Fr. S. M. p. 426. Epicr. p. 520. (Fig. 72.)*

Fleshy or membranaceous fungi, either with a stem or sessile.

869. Sistotrema confluens. Pers. "Confluent Sistotrema."

Simple, confluent, white; pileus fleshy, irregular, horizontal, villous; stem somewhat excentric; teeth flexuose (entire or jagged).—*Fr. Epicr. p. 520. Bull. t. 453, f. 1. Grev. t. 248. Sow. t. 112. Eng. Fl. v. p. 160.*

On the ground.

[Mid. Carolina.]

Gregarious, often anastomosing, or two or three growing into each other, scentless, brittle, whitish, at length yellowish, or tinged with brown; stem attenuated below, central or lateral, about an inch high; pileus about 1 in. broad, somewhat depressed. Tooth-like plates of the hymenium entire or jagged.—*Grev. (Fig. 72.)*

Gen. 30.

IRPEX, Fr. El. p. 142.

Fig. 73.

Teeth formed at an early stage of the growth of the subiculum, concrete with it, and disposed in rows, or like network, and connected together. (*Fig. 73.*)

Hymenium inferior, at first toothed. Teeth variable, firm, somewhat coriaceous, acute, entirely concrete with the pileus, placed in rows, or netted and connected at the base into lamellæ, or porous folds. Lignatile fungi, rather coriaceous, approaching *Lenzites* and *Dadalea*, but the hymenium is toothed from the first, the teeth not lacerated.—*Fr. Epicr. p. 521.*

870. *Irpex pendulus.* *Fr.* "Pendulous *Irpex*."

Pileus membranaceous, plicate, clothed with adpressed, pilose scales, yellow; extended behind, pendulous; margin white; teeth seriate, large, incised, white.—*Fr. Epicr. p.* 521. *All. & Sch. t.* 6, *f.* 7. *Eng. Fl. v. p.* 160. *Bisch. f.* 3411. *Rabh. F.E. no.* 19.

On pine wood. Rare. Scotland. [Low. Carolina.]

Pilei 1 in. or more broad, very thin, somewhat resembling paper, capable of being folded up or stretched, concrete or infundibuliform, from a stem-like base, clothed with long, even, pilose scales, so closely pressed that the whole surface appears slightly rugulose; spines distinct, chiefly seated on the produced base, which is at length brownish, various in form, generally disposed in rows.—*Fries.*

871. *Irpex Johnstoni.* *Berk.* "Johnston's *Irpex*."

Pure white, coriaceo-membranaceous, separable from the matrix; circumference naked; teeth compressed, unequal, disposed in rows.—*Berk. Outl. p.* 262. *Irpex lacteus, Eng. Fl. v. p.* 161.

On dead branches of beech.

Two inches long, effused, with the margin reflexed all round, and the teeth exactly resembling those of many true species of *Hydnum*, but on minute inspection they will be found to be seated upon fine folds, and disposed in rows.—*M.J.B.*

872. *Irpex obliquus.* *Fr.* "Oblique *Irpex*."

Effuse, crustuso-adnate, white, then pallid, circumference byssoid, teeth springing from a porous base, compressed, unequal, incised, oblique.—*Fr. Epicr. p.* 523. *Bolt. t.* 167, *f.* 1. *Kl. exs. no.* 121.

On fallen branches. Berwick. Linlithgowshire.

[Low. and Mid. Carolina.]

"This spreads in irregular patches on the surface of decaying wood. The pores for a small space round the margin are round and distinct, but towards the centre greatly lengthened out, lying one upon another in an imbricated manner. The colour is white at first, when old it changes to a yellow brown, and at last to a dirty, fuscous black."—*Bolton. (Fig. 73.)*

873. *Irpex fusco-violaceus.* *Fr.* "Violet *Irpex*."

Pileus effused, reflexed, coriaceous, silky, zoned, greyish white; teeth lamelloso-seriate, brownish violet, incised at the tips.—*Fr. Epicr. p.* 521. *Willd. Bot. Mag. iv. t.* 2, *f.* 5. *Fckl. exs. no.* 1337. *Br. Bath. Trans.* 1870. *p.* 87.

On pine trunks. Leigh Woods.

[Mid. Carolina.]

Gen. 31.

RADULUM, Fr. El. p. 148.

Fig. 74.

Tubercles rude, irregular, commonly elongated and cylindrical, obtuse, waxy. (Fig. 74.)

Hymenium amphigenous, tubercular. Tubercles rough, irregular, generally elongated and cylindrical, obtuse, waxy or fleshy, scattered or fasciculate. A very natural genus of epixylous fungi, resupinate, extended, usually breaking through the bark.—Fr. *Epicr.* p. 524.

874. Radulum orbiculare. Fr. "Orbicular Radulum."

In the autumn—effused, orbicular, confluent, white, then yellowish; circumference byssoid; tubercles elongated, irregular, roundish, scattered or fasciculate; in the spring—waxy or fleshy, smooth, flesh-coloured; tubercles broader and shorter.—Fr. *Epicr.* p. 524. Grev. t. 278. Eng. Fl. v. p. 161. Bail. t. 29.

On dead branches of birch.

Very variable, generally originating beneath the epidermis, 2-3 in. broad, quite membranaceous, or above 2 lines thick, margin byssoid, occasionally showing a disposition to become reflexed; hymenium consisting of irregularly disposed, oblique, or erect, tooth-like, obtuse, entire, or laciniated, often fasciculate tubercles, the apices sometimes somewhat tomentose. Occasionally they are much scattered and almost resemble spines.—M. J. B.

875. Radulum quercinum. Fr. "Oak Radulum."

Somewhat rounded, then broadly confluent, innate, crustaceous, becoming smooth, white, then pallid; tubercles rounded, elongated, stout, obtuse, scattered, or fasciculate, irregular, floccoso-villose at the apex.—Fr. *Epicr.* p. 525. Ray. Syn. t. 1. f. 4. Ann. N. H. no. 362. *Hydnum Barba-Jovis*, Sow. t. 328. Eng. Fl. v. p. 159.

On branches of oak. Rare.

Adnate, persistent, 2-3 in. long, according to Fries, but Eng. Fl. states—"Sometimes a foot or more broad, white when young, then yellowish rufous, membranaceous, composed of the finest down, margin byssoid, pure white." (Fig. 74.)

876. Radulum fagineum. *Fr.* "Beech Radulum."

Innate, decorticating, smooth, white, becoming pallid; tubercles elongated, terete, obtuse, entire.—*Fr. El.* p. 152. *Fr. Epicr.* p. 525.

On prostrate beeches. Feb. Mar. [Epping Forest. *W.G.S.*
[Mid. Carolina.]

This species was found in abundance in Epping Forest in 1869, but has not been met with since.

Gen. **32. PHLEBIA,** *Fr. S. M.* p. 426.

Fig. 75.

Hymenium soft and waxy (sub-gelatinous), spread over persistent crest-like wrinkles or veins, whose edge is entire. (*Fig. 75.*)

Hymenium amphigenous, of a soft, waxy texture, glabrous, continuous, from the first corrugated, spread over crowded, interrupted, and persistent wrinkles or veins, whose edge is entire. Resupinate, spreading fungi, when moist gelatinous and waxy, when dry cartilaginous.—*Fr. Epicr.* p. 526.

877. Phlebia merismoides. *Fr.* "Straight-folded Phlebia."

Effuse, even or encrusting, flesh-coloured, then livid, white and villous beneath, circumference orange, strigose; wrinkles simple, straight, crowded.—*Fr. Epicr.* p. 526. *Grev. t.* 280. *Huss. ii. t.* 44. *Eng. F. v. p.* 162. *Bail. t.* 29.

On old stumps and decayed branches. Rare.

[United States.]

"Plant 2-3 in. across, folds nearly straight when growing on a smooth surface, passing into prominent papillæ in individuals incrusting mosses." Thin, almost tremelloid when fresh. (*Fig. 75.*)

878. Phlebia radiata. *Fr.* "Radiating Phlebia."

Subrotund, equal, smooth on both sides, fleshy-red, circumference radiato-dentate, folds straight, radiating in rows.—*Fr. Epicr.* p. 526. *Sow. t.* 291. *Eng. Fl. v. p.* 162.

On bark. Very rare. Appin.

[United States.]

Between fleshy and membranaceous, tough, at first orbicular, then dilated, confluent, 1-3 inches broad; margin free, smooth, but beautifully fibroso-radiated; folds radiating from the centre, short, interwoven, very close.—*Fries*. Thicker than *P. merismoides*, and bright in colour, almost orange.—*M. J. B.*

879. Phlebia contorta. *Fr.* "Contorted Phlebia."

Effuse, rather firm, rufous, then brown, smooth on both sides, circumference indeterminate, folds here and there conglomerate, or ramulose, somewhat flexuose, irregularly disposed.—*Fr. Epicr. p.* 526. *Pers. M.E. t.* 18. *f.* 5.

On decayed wood. Rare.

Effused and contorted, substance firmer than in the last, folds not radiating, but sometimes scattered and sometimes conglomerated.

880. Phlebia vaga. *Fr.* "Rambling Phlebia."

Effuse, adnate; circumference byssoid or fibrillose, dirty-yellowish; hymenium yellowish-grey; veins creeping, intricate, at length coalescing, and granuloso-papillose.—*Fr. Epicr. p.* 527. *Ann. N.H. no.* 51. *Loudon, f.* 16126.

On decayed wood. Common. [Low. & Mid. Carolina.]

Arachnoid at first, then traversed with intricate fructifying veins, rather than wrinkles, which multiply rapidly and form an intricate mass.—*M. J. B.*

Gen. 33. GRANDINIA, *Fr. Gen. Hym.*

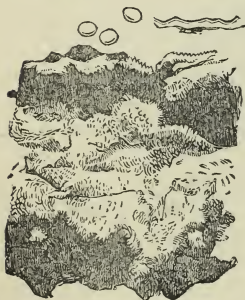


Fig. 76.

Hymenium waxy, granulated; granules obtuse, entire, equal, crowded, smooth, persistent.

(*Fig. 76.*)

Hymenium amphigenous, continuous, waxy, papillose, warty, or granulose; the granules globular or hemispherical, entire, obtuse, crowded, regular, glabrous, persistent. Incrusting, spreading, soft fungi.—*Fr. Epicr. p.* 527.

881. Grandinia papillosa. *Fr.* "Papillose Grandinia."

Membranaceous, subrotund, entire, seceding, milk white, smooth and yellowish beneath; circumference furfuraceous; hymenium very much cracked; granules minute, crowded, equal, subspher-

rical.—*Fr. Epicr. p. 528. Berk. Ann. N.H. no. 282. Libert. exs. no. 21.*

On sticks. Wiltshire. *C. E. B.*

The plant found by Mr. Broome in Wiltshire is exactly like that of Madame Libert; it was probably omitted from Berkeley's Outlines from a doubt whether it was really the species intended by Fries.

882. *Grandinia granulosa.* Fr. "Granular Grandinia."

Waxy, broadly effused, agglutinate, tan-coloured; circumference determinate, smooth; hymenium equal; granules hemispherical, equal, crowded.—*Fr. Epicr. p. 527. Thelephora granulosa, Eng. Fl. v. p. 171. Berk. exs. no. 299.*

On fallen branches. Common. [United States.]

Forming a thin, adnate, whitish, or sub-ochraceous stratum, following the irregularities of the wood, with scarcely any definite circumference, beset with crowded, rather sharp granules.—*M. J. B. (Fig. 76.)*

883. *Grandinia ocellata.* Fr. "Ocellate Grandinia."

Waxy, broadly effused, agglutinate, livid; circumference indeterminate, sterile; hymenium unequal; granules crowded, somewhat conical, obtuse, equal, of the same colour.—*B. & Br. Ann. N.H. no. 1027. Fr. Epicr. p. 527.*

On dead prostrate trunks. Aug. Sept. Bodelwyddan. Coed Coch.

Gen. 34.

ODONTIA, Fr. Gen. Hym.

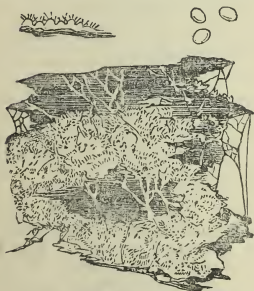


Fig. 77.

Subiculum formed of interwoven fibres, clothed with papillose or spine-shaped warts, which are crested at the apex.

(*Fig. 77.*)

Hymenium inferior, formed of fibres interwoven into papillose warts, rarely awl or brittle-like, furnished at the apex with a multifid crest. Resupinate, spreading fungi, dry, not waxy, approaching more to *Hydnum*.—*Fr. Epicr. p. 528.*

884. *Odontia fimbriata.* Fr. "Fringed Odontia."

Effuse, membranaceous, separating, traversed by rhizomorphoid threads, pallid; circumference fibrilloso-fimbriate; warts minute,

granuliform, apex multifid, rufescent.—*Fr. Epicr. p.* 529. *Pers. M.E.t.* 6, f. 5, 6. *Berk. exs. no.* 143. *Hydnum fimbriatum, Eng. Fl. v. p.* 159.

On fallen branches.

[United States.]

In young perfect specimens the membrane is furnished with branched ribs, which adhere less firmly to the matrix. Margin most elegantly radiato-fibrillose, white. Dry specimens are of a uniform fawn-colour. Sometimes the fimbriated margin is entirely absent. Warts at first granular, minute, at length elongated.—*M. J. B.* (Fig. 77.)

Order IV. AURICULARINI.

Hymenium confluent with the hymenophore, at first even, or rarely veined, and commonly remaining even.

Fleshy—

Hymenium distinct, even or rugose, putrescent when old *Craterellus.*

Hymenium fleshy, tough, at length rigid, striate, veined, or papillose *Thelephora.*

Hymenium coriaceous, even, without bristles *Stereum.*

Beset with short stiff bristles *Hymenochaete.*

Hymenium gelatinous when moist, folded *Auricularia.*

Hymenium fleshy, collapsing when dry, even *Corticium.*

Cup-shaped, submembranaceous—

Hymenium inferior *Cyphella.*

Cylindrical, tubular *Solenia.*

Hymenium homogeneous, closely floccose, beset with rigid, fasciculate bristles *Kneiffia.*

Gen. 35.

KNEIFFIA, Fr. Gen. Hym.

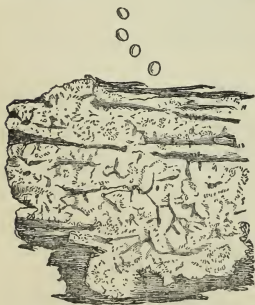


Fig. 78.

Soft, loosely fleshy, flocculose and collapsing when dry; hymenium rough with rigid, scattered, and fasciculate bristles.

(Fig. 78.)

Hymenium amphigenous, continuous, destitute of granules or warts, rough with stiff bristles scattered or fasciculate. Fleshy, soft fungi protruding in various forms from the clefts of bark, in their most perfect form hemispherical; collapsing into flocci when dry.—*Fr. Epicr. p.* 529.

885. Kneiffia setigera. Fr. "Bristly Kneiffia."

White, irregularly effused, thickish, fleshy, undulate, flocculose within, silky beneath, bristles scattered, hyaline.—Fr. *Epicr.* p. 529. Fr. *El.* p. 208. *Ann. N.H.* no. 363.

On fallen branches. Wraxall. [United States.]

White, somewhat resembling *Grandinia granulosa* in general appearance.—*M.J.B.* (Fig. 78.)

Gen. 36. CRATERELLUS, Fr. Gen. Hym.

Fig. 79.

Fleshy. Hymenium unchangeable, carnosomembranaceous, distinct, smooth, even, or at length rugose. Putrescent when old. (Fig. 79.)

886. Craterellus lutescens. Fr. "Yellowish Craterellus."

Pileus submembranaceous, tubæform, soon pervious, undulated, brown, flocculose; stem hollow, yellow; hymenium remotely costate, even, then rough with interwoven veins.—Fr. *Epicr.* p. 532. *Pers. M.E.* t. 13, f. 1. *Schæff.* t. 157. *Kl. exs.* ii., no. 208. *Bolt.* t. 105, f. 2. *Batsch.* f. 36. *Cantharellus lutescens*, *Eng. Fl.* v. p. 126.

In woods. Rare. Edinburgh. [Low. Carolina.]

Single or gregarious. Pileus 1-3 in. broad, depressed, at length infundibuliform, yellowish livid-brown; veins decurrent, anastomosing, flexuous, yellow or flesh colour; stem 2-3 in. high, 2-3 lines thick, yellow, hollow, unequal.—*Grev.*

887. Craterellus cornucopioides. Fr. "Horn-like Craterellus."

Pileus submembranaceous, tubæform, pervious, squamulose, dingy-black; stem hollow, black; hymenium even, then rugulose, cinereous.—Fr. *Epicr.* p. 532. *Bisch.* f. 3304. *Fl. Dan.* t. 384, 1260. *Kl. exs.* no. 626. *Schæff.* t. 165, 166. *Sow.* t. 74.

Krombh. t. 45, f. 18, t. 46, f. 10-13. Mich. t. 82, f. 5, 6. Berk. Outl. t. 19, f. 6. Huss. ii. t. 37. B. & Br. Ann. N. H. 1866, p. 55. Cantharellus cornucopioides, Eng. Fl. v. p. 126. Schnitz. Sturm. t. 5.

In woods, on the ground.

[United States.]

Spores $\cdot 0006 \times \cdot 00035$ in. Sporophores forked above, the spicules long and often less than four in number. More or less tufted. Pileus 3 in. or more broad, dark brown-black, perforated, trumpet-shaped, somewhat lobed and split, tough, elastic, rugoso-squamulose, confluent with the subobsolete black stem. Hymenium decurrent, cinereous, either very slightly rugulose, or distinctly wrinkled.—*M. J. B.* (Fig. 79.)

888. Craterellus sinuosus. Fr. "Waved Craterellus."

Pileus rather fleshy, infundibuliform, undulated, flocculoso-villous, brownish-grey; stem stuffed; hymenium at length implexo-rugose, pallid cinereous, as well as the stem.—*Fr. Epicr. p. 533. Vaill. t. 11, f. 11-13. Cantharellus sinuosus, Eng. Fl. v. p. 127. Kl. exs. no. 625. Berk. exs. no. 280.*

In woods. Scotland.

Distinguished from every state of the preceding by the colour, and the different nature of the stem.—*M. J. B.* Spores cream colour, $\cdot 00021 \times \cdot 00035$ in.

889. Craterellus crispus. Fr. "Crisped Craterellus."

Pileus somewhat pervious, crisped, dingy, inclined to tawny; stem stuffed below; hymenium nearly even.—*Fr. Epicr. p. 533. Bull. t. 465. Sow. t. 75. Cooke exs. no. 225.*

In woods.

Hymenium sometimes white, sometimes dingy. Fries appears to consider it a variety of *C. sinuosus*.

Gen. 37.

THELEPHORA, Fr. Gen. Hym.



Fig. 80.

Pileus destitute of cuticle, consisting of interwoven fibres. Hymenium costato-striate or papillose, of a tough, fleshy consistence, at length rigid, and finally collapsing and flocculent. (Fig. 80.)

Sect. 1. *Mesopus*.**890. Thelephora Sowerbei.** *Berk.* "Sowerby's Thelephora."

White, infundibuliform, at length discoloured, rough and aculeate above, hymenium not setulose.—*B. & Br. Ann. N.H.* 1865, no. 1027*. *Berk. Outl.* p. 266. *Sow. t.* 155.

On the ground in woods. Rare. Burnham Beeches.

When fresh of a pure white, when exposed to the weather it assumes a dingy yellow tinge here and there. The hymenium is not in the slightest degree setulose. The pileus is rough, with radiating processes projecting from the surface. Sowerby's figure was evidently taken from discoloured specimens, but is very faithful.—*M. J. B.*

891. Thelephora multizonata. *B. & Br.* "Many-zoned Thelephora."

Pileus multiplex, infundibuliform, originating from the variable confluent lobes and stems, above of a beautiful fleshy-red, and much zoned; margin lobato-crenulate, hymenium finely ribbed, paler, smooth.—*Ann. N.H.* 1865, no. 1028, t. xiii. f. 4. *T. pannosa*, *Eng. Fl.* v. p. 163. *T. Sowerbei*, *Berk. Outl.* in part.

On the ground. Cotterstock.

Forming a dense mass, of a beautiful reddish tint; flesh and stem zoned within. Perfectly distinct from Sowerby's plant, with which it is confounded in *Eng. Fl.* and *Berk. Outl.*

892. Thelephora tuberosa. *Grev.* "Tuberous Thelephora."

Subcoriaceous, smooth, pallid, becoming rufous; pileus cut down to the bulbous stem into compressed branches, disposed in an infundibuliform manner, hymenium inferior, smooth.—*Fr. Epicr.* p. 535. *Grev. t.* 178. *Eng. Fl.* v. p. 164.

On the ground. Rare. Edinburgh. [Mid. Carolina.]

Scattered, subcoriaceous, about 1 in. high; pileus about two-thirds of the height of the entire plant, variously divided into compressed, acute, or obtuse branches. The main branches are given off from the same point, and are disposed in a circular manner, leaving the centre free, and somewhat infundibuliform; stem nearly cylindrical, obscurely furrowed, or lacunose, bulbous at the base. Hymenium covering the whole plant except the stem. Spores oval, numerous.—*Grev.*

893. Thelephora anthocephala. *Fr.* "Flower-headed Thelephora."

Coriaceous, soft, subferruginous; pileus divided to the simple, equal, villous stem, into sub-erect laciniae, which are dilated upwards, and fimbriate, becoming whitish; hymenium inferior,

even.—*Fr. Epicr. p. 536. Bull. t. 452, f. 1. Berk. Outl. t. 17, f. 4. Sow. t. 156. Berk. exs. no. 244. T. coralloides, Eng. Fl. v. p. 163.*

On the ground in woods.

[United States.]

From the same point spring many erect, often confluent, pale branches, spreading upwards into greyish or purplish brown, strongly streaked branchlets, disposed frequently like the petals of a pink, their apices dilated, pale, and generally fimbriated. Smell scarcely any.—*M. J. B.*

894. Thelephora caryophyllea. *Fr.* "Clove-coloured Thelephora."

Subcoriaceous, purplish brown; pileus depressed, fibroso-lacerate; margin sometimes incised, sometimes divided into a few linear branches, hymenium nearly even, smooth.—*Fr. Epicr. p. 536. Ann. N. H. no. 283. Berk. exs. no. 241. Cooke. exs. no. 219. Corda. Icon. v. f. 72. Schnitz. Sturm. t. 6.*

On the ground in woods. Rare. Bungay. [United States.]

It assumes every form, from that of a perfect cup with a central stem to a much and irregularly branched frond.—*M. J. B.*

Sect. 2. Merisma.

895. Thelephora palmata. *Fr.* "Palmate Thelephora."

Coriaceous, soft, erect, very much branched, pubescent, purplish-brown, base simple and stem-like, branches flat, even; dilated above, palmate, sub-fastigiate, tips fimbriate, whitish.—*Fr. Epicr. p. 537. Grev. t. 46. Krombh. t. 54, f. 24, 25. Holms. i. t. 10. Bisch. f. 3311. Nees. f. 151. Eng. Fl. v. p. 163. Smith, P. M. f. 4. Rabh. F. E. no. 119.*

On the ground. Very foetid.

[United States.]

Smell very bad a few minutes after gathering, varying from $\frac{1}{2}$ in. to more than 4 in. in height, and from a single stem to a dense mass, 2 or 3 in. in thickness.—*Grev.*

896. Thelephora terrestris. *Fr.* "Ground Thelephora."

Cæspitose, soft, brown, at length blackish; pileoli imbricated, plane, fibroso-strigose, zoneless, elongated into a somewhat lateral stem; margin similar; hymenium inferior, radiato-rugose.—*Fr. Epicr. p. 538. Nees. f. 251. Batsch. f. 121. Eng. Fl. v. p. 165. Bail. t. 28. Ann. de. Sc. Nat. (1837) viii. t. 8. f. 12, t. 11, f. 29.*

On the ground.

[Mid. & Up. Carolina.]

Pileus 1-2 in. across, somewhat zoned, papillæ scattered.—*Eng. Fl.*

Sect. 3. *Apus*.**897. Thelephora cristata.** *Fr.* "Crested Thelephora."

Incrusting, rather tough, pallid, passing into branches, or ascending cæspitose laciniae, apices subulate, fimbriate; hymenium papillose, on even spaces, or the sides of the branches.—*Fr. Epicr. p.* 539. *Desm. exs. no.* 362. *Bull. t.* 415, *f.* 1. *Sow. t.* 158. *Linnæa. v. t.* 7, *f.* 2. *Eng. Fl. v. p.* 164. *Bisch. f.* 3290. *Ann. N.H. no.* 284. *Berk. exs. no.* 243. *Fl. Dan. t.* 2272, *f.* 3.

On moss, &c.

Whitish, greyish, or purplish brown; at first quite resupinate, gradually extending, and acquiring a branched appearance, the apices compressed, expanded, and beautifully fringed or laciniated.—*Eng. Fl.*

898. Thelephora mollissima. *P.* "Soft Thelephora."

Fleshy, soft, incrusting; pileus effuso-reflexed, laciniate, subtomentose, whitish, hymenium inferior, smooth, even, purplish-brown.—*Fr. Epicr. p.* 540. *Berk. Outl. t.* 17, *f.* 5. *Ann. N.H. no.* 286. *Berk. exs. no.* 245. *Desm. exs. no.* 362.

On the ground in woods.

Extremely variable, sometimes quite effused, sometimes assuming the form of *T. palmata*.—*M.J.B.* Often incrusting the stems of grasses, as in the figure quoted above.

899. Thelephora laciniata. *P.* "Torn Thelephora."

Coriaceous, soft, incrusting, ferruginous brown; pilei subimbricated, effuso-reflexed, fibroso-squamose, margin fibrous, fimbriated, at first whitish; hymenium inferior, papillose, floc-culose.—*Fr. Epicr. p.* 540. *Bolt. t.* 173. *Sow. t.* 213. *Fl. Dan. t.* 1198, 949. *Eng. Fl. v. p.* 165. *Berk. exs. no.* 242. *Cooke exs. no.* 220.

On branches, heathy ground, &c. Common.

[United States.]

Larger, paler, and not so strigose as *T. terrestris*, the fibres being adnate forming little ridges, rather than scales; margin fringed and laciniated; papillæ closer.—*M.J.B.* (*Fig.* 80.)

900. Thelephora biennis. *Fr.* "Biennial Thelephora."

Coriaceous, soft, broadly incrusting, cinereous-brown; pilei at length reflexed, narrow, tomentose; circumference fimbriated; hymenium subresupinate, smooth, subsetulose, plicate at the base.—*Fr. Epicr. p.* 540. *Bull. t.* 436. *Ann. N.H. no.* 364.

On the ground, incrusting stones, &c. Rare. Kew and Bowood. [Mid. and Up. Carolina.]

901. Thelephora fastidiosa. *Fr.* "Stinking Thelephora."

Effused, soft, amorphous, incrusting, white, passing into laminose branches; hymenium inferior, at length rufous, papillose.—*Fr. Epicr. p.* 540. *Ann. N.H. no.* 285.

On the ground. Foetid.

Distinguishable at once by its abominable odour, which remains for a long time in dried specimens.—*M. J. B.*

902. Thelephora byssoides. *P.* "Byssoid Thelephora."

Irregularly effused, at first byssoid, ochraceous-white, then in a compact, fleshy disc, pulverulent, yellowish, circumference byssoid, whitish.—*Fr. Epicr. p.* 542. *Eng. Fl. v. p.* 168. *Berk. exs. no.* 20. *Fl. Dan. t.* 2276. *f.* 2.

On the ground amongst fir leaves, &c.

Patches 1 ft. or more broad, at first white, very thin, soft and cottony, but not radiating, with a slight ochraceous tinge in the centre, gradually thickening, and becoming more or less tuberculated; at length of a more or less intense yellow-brown from the ejection of the oval, obtuse spores.—*M. J. B.*

Sect. 4. Resupinatus.

903. Thelephora cæsia. *P.* "Ash-grey Thelephora."

Effused, determinate, soft, continuous, ashy-grey; hymenium nearly even; setæ quaternate.—*Fr. Epicr. p.* 541. *Nees. f.* 254. *Pers. Obs. i. t.* 3. *f.* 6. *Ann. N.H. no.* 365. *Berk. Outl. p.* 269.

On the ground in woods.

The surface is sometimes quite smooth, sometimes distinctly papillose.—*M. J. B.*

904. Thelephora sebacea. *Fr.* "Waxy Thelephora."

Effused, fleshy, waxy, becoming hard, incrusting, variable, tuberculose or stalactitic, whitish, circumference similar; hymenium flocculose, pruinose, or evanescent.—*Fr. Epicr. p.* 542. *Pers. Comm. t.* 4. *f.* 4. *Fl. Dan. t.* 1302. *Letell. t.* 607. *f.* 3. *Berk. Outl. t.* 17. *f.* 6. *Bon. t.* 12. *f.* 253. *Kl. exs. no.* 1811.

On grass, &c. Common.

[United States.]

905. Thelephora puteana. *Schum.* "Cellar Thelephora."

Roundish and effused, fleshy, rather thick, fragile, pallid-yellowish; circumference mucedinous, white; hymenium sub-undulated.—*Fr. Epicr. p.* 542. *Fl. Dan. t.* 2035. *f.* 1. *Ann. N.H. no.* 7.

On stumps, wood in cellars, &c.

Varying from almost perfect evenness to considerable inequality of surface, with various tints of olive, tawny, ferruginous, cinereous, &c., in the same patch. When rubbed it has a disagreeable fishy odour.—*M.J.B.*

906. Thelephora laxa. *Fr.* "Loose Thelephora."

Membranaceous, soft, loosely adherent, beneath arachnoid, tomentose; circumference byssoid, white; hymenium papillose, pallid, then olive-ferruginous, powdered with ferruginous spores.—*Fr. Epicr. p.* 543. *Ann. N.H. no.* 366.

On lichens, moss, &c. Rare.

Analogous to *Thelephora puteana*.

907. Thelephora arida. *Fr.* "Dry Thelephora."

Membranaceous, effused, adnate, continuous, circumference whitish; hymenium even, sulphureous tan colour, then setulose, powdery, ferruginous-umber.—*Ann. N.H. no.* 8. *Fr. El. i. p.* 197. *Berk. exs. no.* 148.

On decayed pine-wood. Common. [Low. Carolina.]

Not so thick as *Thelephora puteana*.

908. Thelephora olivacea. *Fr.* "Olive Thelephora."

Membranaceous, effused, adnate, circumference fimbriated, whitish; hymenium dull olive, setulose, tomentose.—*Fr. Epicr. p.* 543. *Berk. Outl. p.* 269.

On pine wood.

909. Thelephora anthochroa. *P.* "Bright-coloured Thelephora."

Effused, sub-adnate, circumference byssoid, paler; hymenium even, brownish-rose, then pallid, floccose, velvety.—*Fr. Epicr. p.* 544.

var. versicolor. Varicously tinted with fugitive shades of lilac and brown.—*Berk. Outl. p.* 270. *Ann. N.H. no.* 809.

On sycamore twigs. Rare. [Mid. Carolina.]

The young plant of the above variety is not at all brick-coloured, but variously tinted with fugitive shades of lilac and brown.—*B. & Br.*

Gen. 38.

STEREUM, Fr.

Fig. 81.

Hymenium coriaceous, rather thick, concrete with the intermediate stratum of the pileus, which has a cuticle, always even and veinless, unchangeable, not beset with bristles. (Fig. 81.)

910. Stereum purpureum. Fr. "Purple Stereum."

Coriaceous, soft; pileus effuso-reflexed, obsoletely zoned, villosa-tomentose, pallid or whitish; hymenium naked, even, smooth, purplish.—*Fr. Epicr. p.* 548. *Sow. t.* 388, *f.* 1. *Bull. t.* 483, *f.* 1. *Desm. exs. no.* 117, 414. *Mich. t.* 66, *f.* 4. *Huss. i. t.* 20. (*Batsch. f.* 131. *var.*) *Thelephora purpurea, Eng. Fl. v. p.* 166. *Berk. exs. no.* 147.

On fallen trunks, especially poplar. Common.

[United States.]

Perennial. In general densely imbricated, soft but coriaceous, very rigid when dry, deeply zoned, strigose, but not so much as in the next species; margin much waved, and almost plicate, varying greatly in colour, whitish, yellowish-pallid lilac, and with frequently a black zone near the margin. Hymenium smooth, in general of a fine purple or lilac, at length cinereous, sometimes dark brown.—*M. J. B.*

911. Stereum hirsutum. Fr. "Hairy Stereum."

Coriaceous; pileus effused and reflexed, strigose, hairy, somewhat zoned, becoming pallid; margin rather obtuse, yellow; hymenium even, smooth, naked, juiceless, yellowish, unchanged when bruised.—*Fr. Epicr. p.* 549. *Sow. t.* 27. *Grev. t.* 256. *Fl. Dan. t.* 1199 (1738 *f.* 1. *var.*) *Bull. t.* 274 (483, *f.* 2, 4, *var.*) *Desm. exs. no.* 116. *Price, f.* 8. *Mich. t.* 66, *f.* 2. *Berk. Outl. t.* 17, *f.* 7. *Huss. i. t.* 58. *Thelephora hirsuta, Eng. Fl. v. p.* 166. *Cooke, exs. no.* 307. *Rabh. F.E. no.* 1109. *Berk. exs. no.* 146.

On stumps, &c. Common everywhere. [United States.]

Perennial. Variable. At first resupinate, at length generally reflexed, often imbricated, more or less zoned, strigose, tough and leathery, but not rigid, buff, yellowish, or greyish, often acquiring a greenish tinge from the presence of minute *Alge*. Hymenium smooth, even, buff, sometimes cinereous; margin entire, more or less lobed.—*M.J.B.* (Fig. 81.)

912. Stereum spadiceum. *Fr.* "Bright-brown Stereum."

Coriaceous; pilei effuso-reflexed, villous, sub-ferruginous; margin rather obtuse, white, even beneath, smooth and brownish, bleeding when bruised.—*Fr. Epicr. p.* 549. *Fl. Dan. t.* 1619, *f.* 1. *Bull. t.* 483, *f.* 5. *Sow. t.* 25. *Ann. N.H. no.* 50. *Berk. exs. no.* 144. *Cooke, exs. no.* 304.

On sticks, especially ash. Common. [United States.]

Easily known from every state of *Stereum purpureum* by its becoming blood-stained when scratched. Spores copious, pure white, oblong-elliptic.—*M.J.B.*

913. Stereum sanguinolentum. *Fr.* "Bleeding Stereum."

Coriaceous, thin; pileus effuso-reflexed, closely silky, somewhat striate, pallid; margin acute, white; hymenium even, smooth, brownish-cinereous, bleeding when wounded, when old pruinose.—*Fr. Epicr. p.* 549. *Bail. t.* 28. *Grev. t.* 225. *Fl. Boruss. t.* 381. *Thelephora sanguinolenta, Eng. Fl. v. p.* 167.

On wood of firs. Common. [Low. and Mid. Carolina.]

Densely gregarious, at first resupinate and circular, at length dimidiate, or with the margin more or less reflexed all round, silky or almost strigose, zoned, the zones darker; hymenium rough, from the inequalities of the matrix, otherwise smooth, pale greyish-brown, when scratched or bruised becoming instantly blood-red.—*M.J.B.*

914. Stereum rugosum. *Fr.* "Rugose Stereum."

Corky, rigid; pileus effused, and shortly reflexed, obtusely marginate, at length smooth, bright-brown; hymenium unpolished, pruinose, somewhat blood-stained when bruised.—*Fr. Epicr. p.* 552. *T. Lauro-cerasi, Eng. Fl. var. Thelephora rugosa, Eng. Fl. v. p.* 166. *Berk. exs. no.* 145.

On stumps, especially hazel. Common.

[Mid. & Up. Carolina.]

Assuming a blood-red colour when scratched. Sometimes surviving one or more seasons, and then thick and zoned within.

915. Stereum acerinum. *Fr.* "Maple Stereum."

Crustaceous, adnate, even, smooth, white.—*Fr. Epicr. p.* 553.

Thelephora acerina, Eng. Fl. v. p. 172. Moug. exs. no. 991. Berk. exs. no. 65.

On living maple trunks. Common. [United States.]

Spreading in small detached patches over the whole trunk, and resembling the barren-white crust of a lichen; distinguished from *C. sambuci* by its thicker substance, and not changing colour at all when dry. It is of a somewhat farinaceous texture, and cracks very slightly in drying.—*M. J. B.*

Gen. 39.

HYMENOCHÆTE, Lev.

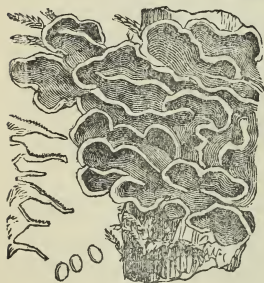


Fig 82.

Coriaceous, dry. Hymenium even, beset with short, stiff, coloured bristles. (*Fig. 82.*)

916. *Hymenochæte rubiginosa.* Lev. “Rubiginous Hymenochæte.”

Coriaceous, rigid; pileus effuso-reflexed, somewhat fasciated, velvety, rubiginous, then becoming smooth and bright-brown, intermediate stratum tawny-ferruginous; hymenium ferruginous, velvety.—*Fr. Epicr. p. 550. Fl. Dan. t. 1619, f. 2. Berk. exs. no. 247. Moug. exs. no. 394. Desm. exs. no. 413. Sow. t. 26. Thelephora rubiginosa, Eng. Fl. v. p. 165.*

On gate posts. Common. [United States.]

Perennial. At first resupinate, at length reflexed, the lower margin generally adhering firmly, very rigid and brittle, often so deeply grooved as to cause corresponding ridges in the hymenium, which is velvety and coarsely, but sparingly, papillose. Margin paler and minutely tomentose.—*M. J. B.*
(*Fig. 82.*)

917. *Hymenochæte tabacina.* Lev. “Flaccid Hymenochæte.”

Coriaceous, thin, flaccid; pileus effused, reflexed, silky, at length smooth, somewhat ferruginous; margin and intermediate filamentose stratum golden-yellow; hymenium paler, pubescent.—*Fr. Epicr. p. 550. Bolt. t. 174. Berk. exs. no. 248. Desm. exs. no. 415. Thel. tabacina, Eng. Fl. v. p. 165. Ann. N.H. no. 152.*

On fallen branches. Rare. [Mid. & Up. Carolina.]

Differs from the foregoing in not being rigid, and in consequence shrivelling when dry, and losing all its beauty ; margin in general reflexed all round —*M. J. B.*

918. Hymenochæte corrugata. *Berk.* "Cracked Hymenochæte."

Effused, closely adnate, indeterminate, cinnamon, cracked when dry.—*Berk. Outl. p. 272. Grev. t. 234. Berk. exs. no. 298, 249. Thelephora corrugata, Eng. Fl. v. p. 172.*

On sticks in woods. Common. [United States.]

Ferruginous brown, with sometimes a slight purplish tinge and a grey bloom, as if covered with a thin coat of white body-colour ; bristles under the microscope jointed.—*Grev.*

Gen. 40. AURICULARIA, Fr.

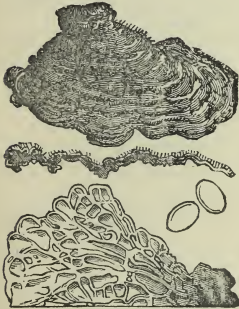


Fig. 83.

Hymenium irregularly and distantly folded, gelatinous when wet, different in substance from the pileus.

(Fig. 83.)

919. Auricularia mesenterica. *Bull.* "Entire Auricularia."

Pilei resupinate, then reflexed, entire, villous, zoned and fasciate, brownish-cinereous ; hymenium costato-plicate, brownish-violet.—*Fr. Epicr. p. 555. Bull. t. 290. Sow. t. 290. Bolt. t. 172. Moug. exs. no. 492. Desm. exs. no. 221. Mich. t. 66, f. 4. Huss. ii. t. 6. Phlebia mesenterica, Eng. Fl. v. p. 162. Cooke, exs. no. 308. Rabh. F.E. no. 1215. Price, f. 27.*

On stems of trees. [Mid. Carolina.]

At first effused, and quite resupinate, at length more or less reflexed, often dimidiate, occasionally infundibuliform, 2-3 in. broad, gelatinous in wet weather, hard and cartilaginous when dry, the upper surface tomentose, more or less zoned or fasciated ; hymenium purplish-violet or light-brown, quite smooth or wrinkled, especially when dry, powdered with a beautiful bloom.—*M. J. B.* Spores white, $\cdot 00027 \times \cdot 00018$ in. (Fig. 83.)

920. Auricularia lobata. *Somm.* "Lobed Auricularia."

Pileus effuso-reflexed, lobed, variegated with strigose or tomentose, velvety or smooth zones, brownish-white; hymenium livid-tawny; folds distant, reticulated.—*Fr. Epicr. p. 555. Berk. Outl. t. 18, f. 1.*

On bark of trees. Staunton.

Very nearly allied to *Auricularia mesenterica*.

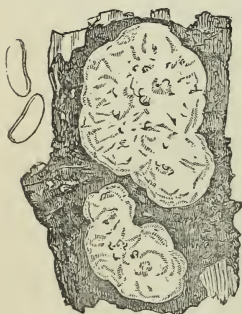
Gen. 41.**CORTICIUM, Fr.**

Fig. 84.

Hymenium soft and fleshy, swollen when moist, collapsing and becoming even when dry, often rimose. (*Fig. 84.*)

Sect. 1. Apus.**921. Corticium evolvens.** *Fr.* "Unfolding Corticium."

Soft, resupinate, submarginate, floccose with pallid down; hymenium zoneless, naked, smooth, somewhat rugose, brown, becoming pale, cracked when dry.—*Fr. Epicr. p. 557. Ann. N.H. no. 1029. Schnitz. Sturm. t. 7. Fr. Obs. i. t. 4, f. 5. Fl. Dan. t. 840, f. 1.*

On dead cherry. Jan. King's Cliffe.

[Low. & Mid. Carolina.]

Sect. 2. Himantia.**922. Corticium giganteum.** *Fr.* "Large Corticium."

Broadly effused, swelling when moist, waxy, hyaline, white, cartilaginous or papery when dry, free, milk-white; circumference strigoso-radiate; hymenium even, continuous.—*Fr. Epicr.*

p. 560. *Moug. exs. no.* 778. *Desm. exs. no.* 417. *Thelephora gigantea*, *Eng. Fl.* v. *p.* 170.

On pine stems. Common. [United States.]

Circumference very broad and almost byssoid, with here and there a tendency to become strigoso-radiate.

923. Corticium lacteum. *Fr.* "Milk-white Corticium."

Effused, membranaceous, milk white beneath, and circumference loosely fibrillose; hymenium waxy, darker, cracked when dry.—*Fr. Epicr. p.* 560. *Rabh. F.E. no.* 1212. *Berk. exs. no.* 250. *Thel. lactea*, *Ann. N.H. no.* 81.

On trunks.

Easily known by its smooth, white hymenium, covering a stratum consisting of thick fibrillæ.—*M. J. B.*

924. Corticium arachnoideum. *Berk.* "Web-like Corticium."

Effused, delicately byssoid, as also the circumference; hymenium white, very thin, patchy.—*Berk. Outl. p.* 273. *Ann. N.H. no.* 287. *t.* 9. *f.* 3.

In woods. [United States.]

Running over lichens, &c., the mycelium as delicate as a spider's web.

Forming delicate, effused, arachnoid patches of a snowy white; threads by no means forming fibres, but spreading like a delicate web, and often remaining barren, but under favourable circumstances giving rise to a smooth, even hymenium, consisting of elliptic sporophores arranged in little bunches.—*M. J. B.*

925. Corticium læve. *Fr.* "Even Corticium."

Effused, membranaceous, seceding, villosa-fibrillose beneath; circumference byssoid, not radiating; hymenium even, smooth, flesh-coloured and livid.—*Fr. Epicr. p.* 560. *Rabh. F.E. no.* 120. *Berk. exs. no.* 246. *Letell. t.* 630. *f.* 1. *Thel. lævis*, *Ann. N.H. no.* 80.

On decayed wood, sticks, &c. Common. [United States.]

This is the commonest of all the species, and assumes a variety of forms. Sometimes it remains closely attached, sometimes the margin is broadly reflexed. The hymenium varies also in colour, being sometimes pure white. The circumference is occasionally almost naked.—*M. J. B.*

926. Corticium roseum. *P.* "Rosy Corticium."

Effused, adnate, rosy; circumference fringed, whitish; hymenium pruinose, growing pale, at length much cracked and corrugated, indurated.—*Fr. Epicr. p.* 560. *Kl. exs. no.* 1516. *Thelephora rosea*, *Eng. Fl.* v. *p.* 168.

On poplar, &c. [Mid. Carolina.]

At first forming small scattered patches, which at length become more or less confluent, the cobweb-like fringe gradually obsolete.—*M. J. B.*

927. Corticium velutinum. *Fr.* "Velvety Corticium."

Effused, adnate, flesh-coloured; circumference with straight, strigose, diverging fibres, of the same colour; hymenium thick, fleshy, soft, even, densely velvety with bristles.—*Fr. Epicr. p. 561. Ann. N.H. no. 288.*

On logs.

[Carolina, U.S.]

A very elegant species, of a pale pink, remarkable for its floccose mycelium, and the delicate frill with which the whole of the hymenium is clothed, giving it a velvety appearance.—*M. J. B.*

928. Corticium sanguineum. *Fr.* "Blood-red Corticium."

Effused, loosely adhering, arachnoid beneath, blood-colour; circumference loosely fibrillose, flesh-coloured, as well as the even, smooth hymenium.—*Fr. Epicr. p. 561. C. miniatum, Berk. exs. no. 251.*

On dead larch. Rare.

929. Corticium sulfureum. *Fr.* "Sulphury Corticium."

Effused, fibrillose or byssoid, bright sulphur-coloured; hymenium (when perfect) thick, waxy, soft, somewhat tawny, rimose when dry.—*Fr. Epicr. p. 561. Letell. t. 630. f. 4. Thelephora sulphurea, Eng. Fl. v. p. 169.*

On fallen sticks.

[Mid. and Up. Carolina.]

At first consisting of loose, distinct, byssoid fibres, in which state it frequently remains without producing a true hymenium, next forming a thin, resupinate, silky, subpulverulent stratum, with a beautiful byssoid margin, at length furnished with a true hymenium, and beset with minute white bristles. The loose fibrillæ of a beautiful saffron yellow, the more advanced stage paler, with a yellowish or cinereous tinge in the centre, the byssoid margin nearly white.—*Eng. Fl.*

930. Corticium cœruleum. *Fr.* "Blue Corticium."

Roundish, then effused, adnate, at first tomentose, bright blue; circumference byssoid, of the same colour or whitish; hymenium waxy, soft, papillose or setulose, becoming smooth.—*Fr. Epicr. p. 562. Letell. t. 630. f. 2. Sow. t. 350. Cooke, exs. no. 221. Roth. Cat. ii. t. 9. f. 2. Desm. exs. no. 396. Thelephora cœrulea, Eng. Fl. v. 168. Rabh. F.E. no. 1005.*

On rails, &c. Common.

[United States.]

At first byssoid, but when fully developed forming a close membrane, following the undulations of the wood on which it grows, of a beautiful dark satiny blue, the margin whitish.—*M. J. B.* Said to be phosphorescent.

931. Corticium atrovirens. Fr. "Black-green Corticium."

Irregularly effused, black-green, beneath and circumference tomentose, of the same colour; hymenium(?).—*Fr. Epicr. p. 562.*

On sticks in woods. Rare. [Mid. Carolina.]

Mr. Berkeley states that, like Fries, he has never found this species with a perfect hymenium.

932. Corticium lactescens. Berk. "Juicy Corticium."

Agglutinate, soft, waxy, undulated, flesh coloured, milky; margin shortly byssoid, at length cracked, interstices silky; hymenium flesh coloured, or pale salmon colour.—*Berk. Outl. p. 274. Thelephora lactescens, Eng. Fl. v. p. 169. Ann. N.H. no. 153. Berk. exs. no. 21.*

On decayed wood of willows, &c.

Thin, spreading for a considerable distance over the bark, and following all its inequalities, with a scarcely byssoid border, inner substance variegated with bands of different shades running parallel with the surface. When broken it gives out a milky juice which in taste and smell resembles exactly that of *Lactarius quietus*.—*M. J. B.*

*Sect. 3. Leiostroma.***933. Corticium calceum. Fr.** "Chalky Corticium."

Effused, agglutinate, waxy, quite smooth, white, circumference similar, hymenium even, smooth, cracked when dry.—*Fr. Epicr. p. 562. Thelephora calcea, Eng. Fl. v. p. 170. Kl. exs. no. 325.*

On pine wood. Common. [United States.]

Unequal in thickness, effused, hard, extending over several inches; hymenium white, discoloured in age, much cracked, papillose, sometimes quite plane and smooth.—*Grev.*

934. Corticium lividum. P. "Livid Corticium."

Effused, agglutinate, waxy, soft, smooth, changing colour, circumference similar, hymenium even, naked, rather viscid, cracked when dry.—*Fr. Epicr. p. 563. Berk. Outl. p. 275. Thelephora livida, Eng. Fl. v. p. 171.*

On wood. Appin.

In the same individuals the colour will be livid-blue and purplish-brown.

935. Corticium ochraceum. Fr. "Ochraceous Corticium."

Effused, agglutinate, waxy, soft, at length smooth, circumference white, somewhat radiating, evanescent; hymenium pallid,

then ochraceous, sprinkled with gold-coloured, micaceous atoms, at length naked, tuberculose or papillose.—*Fr. Epicr. p. 563. Berk. Outl. p. 275. Thelephora ochracea, Eng. Fl. v. p. 170.*

On pine wood.

[Mid. Carolina.]

Covering a large surface, being often a foot or more broad, mostly resupinate, but sometimes slightly reflexed or rather detached at the margin, adhering close to the wood; margin entire in old plants, villous when young; hymenium smooth ochraceous, sometimes with a faint purplish tinge, papillæ rather large, irregular, and spurious, being produced by the asperities of the wood.—*Grev.*

936. Corticium quercinum. P. "Oak Corticium."

Membranaceous, waxy, at first agglutinate, indeterminate, then fixed at the centre; border free and involute, blackish and smooth beneath; hymenium continuous, flesh-coloured.—*Fr. Epicr. p. 563. Nees. f. 253. Gard. Chron. (1860), p. 481, fig. Grev. t. 142. Bull. t. 436, f. 1. Cooke, exs. no. 222. Thelephora quercina, Eng. Fl. v. p. 167. Rabh. F.E. no. 1211.*

On oak branches. Common. [Mid. & Up. Carolina.]

Roundish, resupinate, the margin reflexed all round and involute; pileus smooth, black; hymenium flesh coloured, generally cracked, more or less tuberculated and wrinkled.—*M. J. B.*

937. Corticium cinereum. Fr. "Cinereous Corticium."

Waxy, at length rigid, confluent, agglutinate, lurid; hymenium cinereous, with a very delicate bloom.—*Fr. Epicr. p. 563. Desm. exs. no. 119, 666. Moug. exs. no. 681. Berk. exs. no. 63, 64. Rabh. F.E. no. 20. Thelephora cinerea, Eng. Fl. v. p. 172.*

On dead wood, sticks, &c. Common. [United States.]

The principal distinctive mark of this species is its dingy colour, which varies from brown to cinereous, or almost black.—*M. J. B.*

938. Corticium incarnatum. Fr. "Bright-coloured Corticium."

Waxy, becoming rigid, confluent, agglutinate, circumference radiating; hymenium persistently bright coloured (red or orange), covered with a delicate flesh-coloured bloom.—*Fr. Epicr. p. 564. Fl. Dan. t. 2035, f. 2. Berk. Outl. p. 275. Thelephora incarnata, Eng. Fl. v. p. 171.*

On timber, rails, &c. Common. [United States.]

Extremely variable, forming a thin, variously, but brightly coloured stratum.

939. Corticium nudum. Fr. "Naked Corticium."

Waxy, becoming rigid, agglutinate, flesh-coloured, growing pallid; circumference determinate, smooth; hymenium covered with a fugacious, whitish bloom.—Fr. *Epicr.* p. 564. *Ann. N.H.* no. 715. *Thelephora nuda*, Eng. *Fl.* v. p. 172.

On twigs in woods.

Distinguished from the last by its dull colour when dry. On the same branch individuals occur very thin, quite smooth, and effused, while others are thicker, more cinereous, and tuberculate. Spores oblong, slightly curved, .0005 in. long, .00015 in. broad.—B. & Br.

940. Corticium confluens. Fr. "Confluent Corticium."

Membranaceous, waxy, agglutinate; circumference radiating; hymenium naked, hyaline, then brightly coloured, somewhat shining.—Fr. *Epicr.* p. 564. *Ann. N.H.* no. 716.

On ash twigs, &c.

Distinguished from *C. nudum* more especially by its white, tomentose margin. Spores oblong, .0008 in. long, .0004 in. broad. The more perfect specimens have a few scattered papillæ.—B. & Br.

941. Corticium polygonium. P. "Patchy Corticium."

Determinate, adnate, soon grumoso-cartilaginous, hard, flesh-coloured; circumference similar; hymenium continuous, red, pruinose.—Fr. *Epicr.* p. 564. *Berk. Outl.* p. 276.

On poplar branches. [Mid. Carolina.]

Growing in little round detached patches from the ostiola of *Sphaeria*.

942. Corticium comedens. Fr. "Erumpent Corticium."

Effused, exposed by the splitting of the epidermis of the matrix, thin, innate, flesh-coloured, then pallid; hymenium even, smooth.—Fr. *Epicr.* p. 565. *Nees*, f. 255. *Berk. Outl.* p. 276. *Berk. exs.* no. 22. *Thelephora comedens*, Eng. *Fl.* v. p. 171.

On branches. Common.

Distinguished at once by its peculiar mode of growth. It originates beneath the bark, which peels off and leaves it naked, forming a margin round it.—M. J. B.

943. Corticium Sambuci. P. "Elder Corticium."

Effused, subinnate, variously incrusting, white, continuous when growing, when dry cracked or flocculose and collapsing.—

Fr. Epicr. p. 565. Grev. t. 242. Moug. exs. no. 779. Desm. exs. no. 220. Thelephora Sambuci, Eng. Fl. v. p. 170.

On elder stumps. Common. [Mid. Carolina.]

Apparently papillose, but the papillæ arise from the inequalities of the bark or wood on which it grows.

944. Corticium aurora. B. & Br. "Rosy Corticium."

Very thin, effused, agglutinate, rose-coloured, turning pallid; circumference indeterminate.—*Berk. Outl. p. 276.*

On dead leaves of *Carices*. Batheaston.

Gen. 42.

CYPHELLA, Fr.

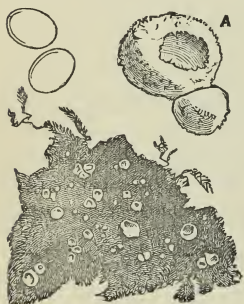


Fig. 85.

Submembranaceous, cup-shaped, elongated behind and frequently pendulous; hymenium distinctly inferior, completely confluent with the pileus. (*Fig. 85.*)

945. Cyphella griseo-pallida. Fr. "Pale-grey Cyphella."

Submembranaceous, globose, then campanulate, sessile, pallid, grey, floccose without; hymenium even, smooth.—*Fr. Epicr. p. 567. Ann. N.H. no. 289.*

On dead *Carex paniculata*. Spy Park.

Whole plant one-third of a line in diameter, at first granuliform, then regularly cup-shaped, with a short stem, and attached by a few radiating, white, strigose, short threads, at length dependent, mostly entire, clothed with white villous down. Hymenium even, pale reddish-grey, border slightly undulated.—*M. J. B.*

946. Cyphella muscigena. Fr. "Whitish Moss Cyphella."

Membranaceous, soft, subsessile, dimidiate, plane, white, silky

without; hymenium rugulose.—*Fr. Epicr. p. 567. Pers. M.E. t. 7, f. 6. Ann. N.H. no. 717. Price, f. 45.*

On mosses. Hanham, near Bristol.

White, with a slight ochraceous tinge. At first flabelliform, fixed by a little down, at length laterally confluent, downy above, often spathulate. Hymenium slightly corrugated.—*B. & Br.*

947. Cyphella galeata. *Fr.* "Hooded Cyphella."

Membranaceous, soft, subsessile, cup-shaped, then dimidiate, helmet-shaped, even, whitish; margin quite entire; hymenium at length somewhat rufous, rugulose.—*Fr. Epicr. p. 569. Fl. Dan. t. 2027, f. 1. Ann. N.H. no. 718. Cantharellus lævis, Eng. Fl. v. p. 127.*

On mosses.

Pileus 2 lines or more broad, at first subglobose, then expanded, minutely tomentose, somewhat lobed, very thin, dirty-white. Hymenium rather uneven.—*Eng. Fl.* Differs from *C. muscigena* in its dingy hue, and bullate pileus.—*M. J. B.* Spores 00038×0003 in.

948. Cyphella ochroleuca. *B. & Br.* "Whitish-ochre Cyphella."

Membranaceous, cup-shaped, villous, and whitish ochre above; margin at length split; hymenium even, pale ochre, brighter than the pileus.—*Berk. Outl. p. 277. Ann. N.H. no. 719.*

On decayed bramble twigs. Batheaston.

One line or more broad, at first cup-shaped, but mostly irregular, then lobed or fissured, villous above, white tinged with yellow. Hymenium even, ochraceous, brighter than the pileus.—*B. & Br.*

949. Cyphella muscicola. *Fr.* "Greyish Moss Cyphella."

Membranaceous, subsessile, persistently cup-shaped, cinereous, pallid-whitish, fibrilloso-striate without; margin slightly downy, repand, torn; hymenium even.—*Fr. Epicr. p. 568. Fl. Dan. t. 2083, f. 2. Kl. exs. no. 824.*

On mosses. Apethorpe.

950. Cyphella lacera. *Fr.* "Torn Cyphella."

Membranaceous, cup-shaped, pendulous, then multifid, torn, vertex extended, stem-shaped, striate above with dense black fibrils; hymenium rugulose, white.—*Fr. Epicr. p. 568. A. & S. t. 1, f. 5. Bisch. f. 3351.*

On dead twigs, &c. Apethorpe.

[Mid. Carolina.]

951. *Cyphella capula.* Fr. "Stalked *Cyphella*."

Membranaceous, obliquely campanulate, extended into a curved stem, smooth, whitish; margin irregular, sinuated; hymenium even.—*Fr. Epicr. p.* 568. *Holms. ii. t.* 22. *Fl. Dan. t.* 1970, *f.* 3. *Cooke exs. no.* 275.

On dead stems.

[United States.]

Looks very much like a *Peziza*. It is sometimes yellow.

952. *Cyphella Goldbachii.* Fr. "Villous *Cyphella*."

Membranaceous, cup-shaped, urceolato-concave, sessile, externally villous, white; hymenium even, pallid.—*Fr. Epicr. p.* 569. *Sturm. t.* 63. *Ann. N.H. no.* 720.

On dead leaves of *Aira cæspitosa*. Spye Park, Wilts.

Differs from *C. cuticulosa* in its villous coat.

953. *Cyphella Curreyi.* Berk. "Currey's *Cyphella*."

Gregarious, sometimes slightly crowded, pezizæform, white, externally villous.—*B. & Br. Ann. N. Hist. no.* 935.

On twigs of broom, furze, elm, &c.

This resembles very closely *Peziza albo-violascens*, but has the true fruit of a *Cyphella*. It is probably the incomplete state of some *Peziza*.

954. *Cyphella fulva.* B. & Rav. "Tawny *Cyphella*."

Membranaceous, cup-shaped, the mouth more or less directed downwards, tawny, externally tomentose. Spores ovate, .0006 in. long.—*B. & Rav. Ann. N.H. no.* 936.

On dead bark.

[S. Carolina, U. S.]

The American specimens are generally fasciculate.

955. *Cyphella cuticulosa.* Fr. "Dickson's *Cyphella*."

Membranaceous, white, diaphanous, at first oblong, then cup-shaped, elongated into a stem, smooth externally.—*Dicks. iii. t.* 9, *f.* 11. *Fr. S.M. ii. p.* 201. *Berk. Outl. p.* 278. *Eng. Fl. v. p.* 215.

On dried grass stems. Oct.—Feb.

Not found since the time of Dickson.

Gen. 43.

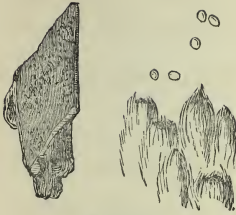
SOLENIA, Pers.

Fig. 86.

Cups tubular, cylindrical; mouth narrowed, inferior, or turned downwards. (Fig. 86.)

This genus has been placed amongst the Discomycetes from neglect of its mode of fruiting; the spores are produced as in *Cyphella*.—C. E. B.

956. Solenia candida. Hoffm. "White Solenia."

Scattered, cylindrical, smooth, whitish.—Hoffm. *Dent. Fl.* t. 8 f. 1. *Br. Bath. Trans.* 1870, p. 90. *Bisch. f.* 3391. *Kl. exs. no.* 922.

On rotten beech. Jan. Batheaston. [Low. Carolina.]

957. Solenia ochracea. Hoffm. "Ochrey Solenia."

Scattered, clavato-cylindrical, subtomentose, ochraceous.—Hoffm. *Dent. Fl.* t. 8. f. 2. *Sow. t.* 369. f. 3. *Br. Bath. Trans.* 1870, p. 90. *Bisch. f.* 3392. *Kl. exs. ii. no.* 232. *Fckl. exs. no.* 1144. *Peziza anomala*, *Eng. Fl.* v. p. 199. *Berk. exs. no.* 260. *Trichia faginea*, *Johnst. F.B.* ii. p. 191.

On dead trees. [Low. & Mid. Carolina.]

Spores subglobose, $\cdot 00025 \times \cdot 0003$ in.

Order V. CLAVARIEI.

Hymenium scarcely distinct from the hymenophore, vertical, amphigenous, reaching to the very apex, even, or at length wrinkled. Never incrusting or coriaceous.—*Fr. Epicr.* p. 570.

Fleshy, frondose, and lacinate *Sparassis*.
Stem not distinct—

Fleshy, hymenium dry *Clavaria*.

Gelatinous, then horny; hymenium viscid . . . *Calocera*.

Stem more or less distinct—

Flaccid, stem thread-like, hymenium waxy. . . *Typhula*.

Waxy, then horny, cellular (sometimes fibrous) . *Pistillaria*.

Gen. 44.

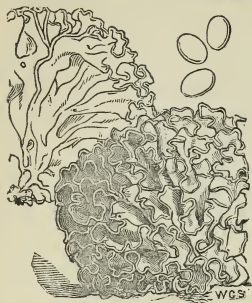
SPARASSIS, Fr. S.M., p. 464.

Fig. 87.

Fleshy, frondose; branches laciniate.—*Fr. Epicr. p. 570.*
(Fig. 87.)

Only one British species, which is rare.

958. Sparassis crispa. Fr. "Crisped Sparassis."

Very much branched, fragile, whitish; branches intricate; tips recurved, not zoned, serrate.—*Fr. Epicr. p. 570. Berk. Intell. Obs. no. 25. t. 1. Lenz. f. 56. Jacq. Misc. ii. t. 14. f. 1. Schæff. t. 163. Hogg. & Johnst. t. 24. Ann. N.H. 1866. 1139*. Bail. t. 27 Kl. exs. no. 517.*

Amongst heath. Sept. South-east Berkshire. Didlington, near Brandon. Esculent. [Up. Carolina.]

Pale ruddy yellow, forming a rounded mass attaining a diameter of 18 in. The laminae rounded and leaf-like, though curled and folded, and variously lobed and laciniate, with a crest-like margin, and springing from a well-marked, thick, rooting stem, the greater part of which is sunk in the soil. Hymenium more or less uneven, and rather wrinkled or rough, with wart-like elevations. In decay the margin becomes soft, acquiring first a yellow, then a brownish tinge, and finally the whole forms a loathsome mass.—*M. J. B.*

Gen. 45.

CLAVARIA, L.

Fig. 88.

Fleshy, branched, or simple, without any stem of a distinct substance. Hymenium dry.—*Berk. Outl. p. 278. (Fig. 88.)*

Sect. 1. *Ramaria*—branched.A. *Leucosporæ*—white spored.**959. *Clavaria botrytis*. P.** “Red-tipped *Clavaria*.”

Fragile, trunk thick, fleshy, unequal, very much branched; branches swollen, unequal, sub-rugose, tips red.—*Fr. Epicr. p. 571. Fl. Dan. t. 1303. Krombh. t. 53. f. 1-3. Schæff. t. 176. Ann. N.H. no. 721. Bisch. f. 3390. Badh. i. t. 16. f. 2. ii. t. 5. f. 3. Price, f. 76. Barla. t. 40. f. 1-3. Harz. t. 67. Corda. Ic. v. f. 75.*

In woods. Rare. Inverary. Bowood. [United States.]

960. *Clavaria amethystina*. Bull. “Amethyst *Clavaria*.”

Fragile, very much branched, violet; branches round, even, obtuse.—*Fr. Epicr. p. 571. Bull. t. 496. f. 2. Holm. i. p. 110. Nees, f. 151. Schæff. t. 172. Cooke, B. F. t. 17. f. 2. Eng. Fl. v. p. 174. Vent. S. M. f. 113.*

In mossy places. Rare. Esculent.

Very variable in size. Sometimes 3 in. or more high, and very much branched, sometimes a few lines and nearly simple.—*M. J. B.*

961. *Clavaria fastigiata*. D.C. “Fastigate *Clavaria*.”

Tough, cæspitose, yellow, slender-stemmed, very much branched; branches short, divaricate; branchlets fastigate.—*Fr. Epicr. p. 571. Bull. t. 358. f. D. F. Holms. i. p. 90. with fig. Fl. Dan. t. 836, f. 2. Pers. Com. t. 4. f. 5. Vaill. t. 8. f. 4. Ray. Syn. t. 24. f. 5. Clav. pratensis, Eng. Fl. v. p. 174.*

In pastures. Common. [Mid. Carolina.]

Sometimes the apices are yellow and at others brown. Slightly fragrant. Spores not truly white, pale buff, irregular; diameter .00027 in.

962. *Clavaria muscoides*. L. “Forked Yellow *Clavaria*.”

Rather tough, graceful, yellow, slender-stemmed, twice or thrice forked; branchlets lunate, acute.—*Fr. Epicr. p. 571. Fl. Dan. t. 775. f. 3. Holm. i. p. 87. with fig. Schæff. t. 173. Krombh. t. 53. f. 22, 23. Kl. exs. no. 1123. Bull. t. 496. f. O. Q. Clav. corniculata, Eng. Fl. v. p. 174.*

In pastures. [Mid. Carolina.]

Taller than the last, solitary, less branched, dry, very smooth, except the base, which is tomentose, bright yellow, resembling somewhat the yolk of an egg; branchlets elongated, attenuated, subcompressed, acute, or obtuse.—*Eng. Fl.*

963. *Clavaria coralloides*. L. "White coral Clavaria."

Rather fragile, white, hollow within; stem slightly thickened, repeatedly and irregularly branched; branchlets unequal, dilated upwards, very numerous, crowded, acute.—*Fr. Epicr. p. 572. Holms. i. p. 113. with fig. Söw. t. 278. Batt. t. i. A. Eng. Fl. v. p. 173. Krombh. t. 53. f. 4. Roq. t. i. f. 1.*

In woods.

964. *Clavaria umbrina*. Berk. "Umber Clavaria."

Pale umber, slightly branched; branches and branchlets cylindrical, obtuse, forked.—*Berk. Outl. p. 279. t. 18. f. 4.*

On mossy lawns. Coed Coch.

The habit is that of *C. fastigiata*. It has not, however, the slightest tinge of yellow.

965. *Clavaria cinerea*. Bull. "Cinereous Clavaria."

Fragile, stuffed, cinereous; stem thick, short, very much branched; branches and branchlets thickened, irregular, somewhat wrinkled, rather obtuse.—*Fr. Epicr. p. 572. Bull. t. 354. Grev. t. 64. Letell. t. 708. f. 1. Badh. i. t. 15. f. 5. ii. t. 5. f. 5. Cooke, B. F. t. 17. f. 1. Cooke exs. no. 227. C. coralloides β . cinerea, Eng. Fl. v. p. 173.*

In woods. Sept.

This appears to be a local species, very common in some places, and in others never to be found.

966. *Clavaria cristata*. Holmsk. "Crested Clavaria."

Tough, even, stuffed, white or dingy; branches dilated above, acute, incised, cristate.—*Fr. Epicr. p. 572. Holm. p. 92. with fig. Fl. Dan. t. 1304. f. 2. Grev. t. 190. Krombh. t. 53. f. 13. Pers. Com. t. 4. f. 3. var. Eng. Fl. v. p. 174. Bisch. f. 3439. Schnitz. Sturm. t. 11.*

In woods.

[Mid. & Up. Carolina.]

Distinguished by its dilated, more or less crested, or fimbriated apices.—*M. J. B. Spores oval, not truly white, with a suggestion of ochre, $\cdot 0002 \times \cdot 00027$ in.*

967. *Clavaria rugosa*. Bull. "Wrinkled Clavaria."

Tough, simple, or branched, thickened above, wrinkled, white or dingy; branches few, irregular, obtuse.—*Fr. Epicr. p. 572. Bull. t. 448. f. 2. Fl. Dan. t. 1301. Rabh. F. E. no. 129. Bolt.*

t. 115. *Sow. t.* 278. *Grev. t.* 328. *Krombh. t.* 54. *f.* 13-17. *Schæff. t.* 291. *var. Cooke, B.F. t.* 17. *f.* 3. *Berk. Outl. t.* 18. *f.* 3. *Eng. Fl. v. p.* 175. *Badh. i. t.* 15. *f.* 4. *ii. t.* 5. *f.* 6. *Cooke exs. no.* 228. *Smith. E. M. f.* 7. *Gard. Chron. (1860) p.* 217. *fig. Berk. exs. no.* 149.

In woods. Common.

[Mid. Carolina.]

Generally simple, but occasionally furnished with a few short branchlets, which are incrassated, longitudinally rugose, and very obtuse.—*M. J. B.*

968. Clavaria Kunzei. *Fr.* "Kunze's Clavaria."

Rather fragile, very much branched from the slender cæspitose base, white; branches elongated, crowded, repeatedly forked, sub-fastigiate, even, equal; axils compressed.—*Fr. Epicr. p.* 573. *Bull. t.* 358. *f.* 1. *C.*

In woods. Rare. Sherwood Forest.

B. Ochrosporæ—spores yellowish or coloured.

969. Clavaria aurea. *Schæff.* "Golden Clavaria."

Trunk thick, elastic, pallid, divided into stout branches; branches straight, dichotomous, round, obtuse, numerous, somewhat toothed, yellow.—*Fr. Epicr. p.* 574. *Schæff. t.* 287. *Bull. t.* 222. *Ann. N.H. no.* 722. *Vent. S.M. f.* 112. *Krombh. t.* 53. *f.* 8.

In woods. Rare. Bristol.

[United States.]

970. Clavaria formosa. *Pers.* "Beautiful Clavaria."

Trunk thick, elastic, whitish, much branched; branches elongated, orange-red; branchlets obtuse, yellowish.—*B. & Br. Ann. N. H. (1865) no.* 1031. *Pers. Ic. & Desc. t.* 3. *f.* 6. *Krombh. t.* 53. *f.* 37. *t.* 54. *f.* 21, 22. *Holms. i. no.* 13. *with fig. Batsch. f.* 48. *Harz. t.* 7. *f.* 6. *Barla. t.* 40. *f.* 4. *Cooke exs. no.* 230.

In woods, &c. Bathford Down.

[United States.]

Spores buff, broadly fusiform, granulated, fleshy, brittle, cuts like *Fistulina*. Spores very large and handsome, elongated, oval, covered with papillæ, $\cdot 0006 \times \cdot 0003$ in.

971. Clavaria abietina. *Schum.* "Fir-wood Clavaria."

Very much branched, ochraceous, trunk somewhat thickened, clothed with white down; branches straight, crowded, longitudinally wrinkled when dry; branchlets straight.—*Fr. Epicr.*

p. 574. *Grev. t.* 117. *Fl. Dan. t.* 2030. f. 2. *Eng. Fl. v.* p. 174. *Gard. Chron.* (1860) p. 871. fig.

In fir woods. Common.

[Mid. Carolina.]

Easily known by its changing to green when bruised. Spores ochraceous.—*Eng. Fl.* Spores oval, greenish-yellow, $\cdot 00023 \times \cdot 00015$ in. (*Fig.* 88.)

972. *Clavaria flaccida.* Fr. “Flaccid Clavaria.”

Slender, very much branched, flaccid, ochraceous; trunk thin, smooth; branches crowded, unequal, converging, acute.—*Fr. Epicr. p.* 574. *Kl. exs. no.* 122. *Ann. N.H. no.* 154.

Amongst moss in woods. King’s Cliffe.

Similar to *C. abietina*, but more delicate.

973. *Clavaria crocea.* P. “Saffron-yellow Clavaria.”

Minute, slender, saffron-yellow; trunk naked, pallid; branches crowded, somewhat forked, as well as the similar branchlets.—*Fr. Epicr. p.* 575. *Pers. Ic. & Desc. t.* 11. f. 6. *Ann. N.H. no.* 367.

On the ground. Rare.

974. *Clavaria grisea.* P. “Grey Clavaria.”

Firm; trunk thick, whitish; branches attenuated, somewhat wrinkled, obtuse, dingy-cinereous; branchlets unequal, obtuse, of the same colour.—*Fr. Epicr. p.* 575. *Berk. exs. no.* 150. *Krombh. t.* 53. f. 9-10. *Eng. Fl. v.* p. 173. *Barla. t.* 41. f. 1-2.

In woods. Rare. Appin.

[Mid. Carolina.]

Known by its brownish spores.

975. *Clavaria stricta.* P. “Straight Clavaria.”

Very much branched, pallid, brownish when bruised; stem somewhat thickened, branches and branchlets straight, even, adpressed, acute.—*Fr. Epicr. p.* 575. *Pers. Com. t.* 4. f. 1. *Fl. Dan. t.* 1302. f. 1. *Eng. Fl. v.* p. 174. *Kl. exs. no.* 1124.

In gardens. Rare. Kew.

[United States.]

Stem rather slender, ascending, furnished at the base with rooting fibrillæ, firm, above 3 lines thick. Branches divided in an arcuate manner, then converging, opaque, generally pale yellow, brownish when bruised. Spores cinnamon.—*Fries.* Fragrant. Spores creamy-yellow, $\cdot 00015 \times \cdot 00024$ in.

976. *Clavaria crispula.* Fr. “Flexuous Clavaria.”

Very much branched, tan-coloured, then ochraceous; trunk

slender, villous, rooting; branches flexuose, multifid; branchlets of the same colour, divaricating.—*Fr. Epicr. p. 576. Bull. t. 358. f. 1. a, b. Ehr. Nat. Cur. x. t. 14. Ann. N. H. no. 723. Fl. Dan. t. 2272. f. 1. Bisch. f. 3472.*

At the base of trees. Rare. Woodnewton.

Spores creamy-yellow, $\cdot 00012 \times \cdot 00021$ in.

Sect. 2. Syncoryne—simple, fasciculate at the base, cæspitose.

977. *Clavaria purpurea.* Müll. "Purple Clavaria."

Cæspitose, purple; clubs elongated, hollow, then compressed, simple, acute.—*Fr. Epicr. p. 576. Fl. Dan. t. 837. f. 2. Ann. N. H. no. 368. Berk. Outl. p. 281. C. rufa, Ann. N. H. no. 155.*

Amongst grass in pastures.

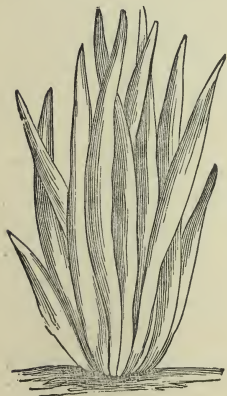
Usually of a dingy purple.

978. *Clavaria rosea.* Fr. "Rosy Clavaria."

Subfasciculate, fragile, roseate; clubs stuffed; tips at length yellowish, attenuated below, whitish.—*Fr. Epicr. p. 577. Sv. Bot. t. 558. Fr. Obs. t. 5. f. 2. Krombh. t. 53. f. 21. Eng. Fl. v. p. 175.*

In pastures, and amongst moss. Rare.

979. *Clavaria fusiformis.* Sow. "Spindle-shaped Clavaria."



(Fig. 89.)

Cæspitoso-connate, rather firm, yellow, soon hollow; clubs somewhat fusiform, simple, and toothed, even; base attenuated, of the same colour.—*Fr. Epicr. p. 577. Sow. t. 224. Bolt. t. 110. Eng. Fl. v. p. 175. (Fig. 89.)*

In woods. Common.

[United States.]

Yellow, smooth, about 3 in. high, many individuals collected into a fasciculate tuft, nearly erect, rather brittle, attenuated at either end; apex darker.—*Fries.*

980. *Clavaria ceranoides*. Pers. "Brown-tipped *Clavaria*."

Fasciculate, unequal, slightly divided above, yellow; apex brown.—*Pers. Syn.* p. 594. *Sow. t.* 235. *Eng. Fl.* v. p. 176.

In woods. Nov. Bagley Wood. Oxon.

Resembles in form some states of *C. rugosa*, but it appears to be very distinct.—*Eng. Fl.*

981. *Clavaria inæqualis*. Müll. "Unequal *Clavaria*."

Gregarious, subfasciculate, fragile, stuffed, yellow; clubs various, simple, or forked, contiguous below and of the same colour.—*Fr. Epicr.* p. 577. *Fl. Dan. t.* 873. (836 ?) f. 1. *Bull. t.* 264. *Sow. t.* 253. *lower figs.* *Huss. i. t.* 18. *Eng. Fl.* v. p. 176.

In woods amongst grass. Common. [United States.]

Somewhat tufted or gregarious, 1-3 in. high, of various sizes and forms, fragile, compressed, angular or channelled, often bifid, and variously cut and jagged at the apex, more or less ventricose in the centre, smooth, and mostly yellow, though occasionally whitish.—*Grev.* Spores white, 00047×00021 in.

982. *Clavaria argillacea*. Fr. "Clay-coloured *Clavaria*."

Fasciculate, fragile, pallid clay colour; clubs simple, various; stem yellow, shining.—*Fr. Epicr.* p. 577. *Fr. Obs. t.* 5. f. 3. *Schm. t.* 15. *Fl. Dan. t.* 1852. f. 2. t. 1966. f. 2. *Pers. Com. t.* 1. f. 4. *Kl. exs. no.* 1218. *Ann. N. H. no.* 370. *Harz. t.* 7. f. a. *C. flavipes*, *Ann. N. H. no.* 83.

In heathy ground.

[Mid. Carolina.]

There is a variety with a white stem. The plant, moreover, is either dilated or cylindrical. The stem in this species is more distinct from the pileus than is consistent with the generic character.—*M. J. B.*

983. *Clavaria tenuipes*. B. & Br. "Slender stemmed *Clavaria*."

(Fig. 90.)

Small, gregarious, club inflated, wrinkled, pallid clay-colour; stem slender, flexuose, somewhat distinct from the club.—*B. & Br. Ann. N. H. no.* 369. *Ser. ii. vol. ii. t.* 9. f. 2.

On bare, heathy ground. Nov. Sherwood Forest. (Fig. 90.)

Not exceeding an inch in height. Head swollen, obovate, rugose, pale clay-coloured, about $\frac{1}{2}$ in. high, rarely confluent with the stem, which is quite smooth, flexuose, and very slender.—*M. J. B.*

984. *Clavaria vermiculata*. Scop. "White-tufted *Clavaria*."

Cæspitose, fragile, white; clubs stuffed, simple, cylindrical, subulate.—*Fr. Epicr.* p. 577. *Fl. Dan.* t. 1966. f. 1. t. 775. f. 2. *Mich.* t. 87. f. 12. *Cooke, B. F.* t. 17. f. 4. *Eng. Fl.* p. 176. *Smith. E. M.* f. 4.

On lawns and short pastures. Common. [Mid. Carolina.]

"Looks like a little bundle of candles."

985. *Clavaria fragilis*. Holmsk. "Brittle *Clavaria*."

Fasciculate, very fragile; clubs hollow, rather obtuse, variable, attenuated below and white.—*Fr. Epicr.* p. 578. *Holms.* i. p. 7. with fig. *Bull.* t. 463. f. 1. *Sow.* t. 90. 232. *Mich.* t. 87. f. b. 10. 13. *Vaill.* t. 7. f. 5. *Fl. Dan.* t. 775. f. 2. t. 1783. *Bolt.* t. 111. *Eng. Fl.* v. p. 176. *Barla.* t. 41. f. 14-16. *Cooke exs.* no. 309.

In meadows, gardens, &c.

[United States.]

Extremely brittle, occasionally yellow. Gregarious, subcæspitose, 1-3 in. high, sometimes forked, stuffed when young, round, straight, at length hollow, compressed, twisted, often rugose, attenuated, paler below, without a distinct stem; apex at length yellowish.—*Fries.*

986. *Clavaria fumosa*. P. "Smoky *Clavaria*."

Fasciculate, fistulose, fragile, smoky-coloured; clubs even, straight, subcompressed.—*Pers. Comm.* p. 76. *Fr. Epicr.* p. 578. *Krombh.* t. 53, f. 18. *Br. Bath. Trans.* 1860, p. 91. *Seem. Journ. Bot.* vii. p. 252.

In grassy places. Sept. Somerset, &c. [Mid. Carolina.]

Sect. 3. Holocoryne—simple, distinct at the base.

987. *Clavaria pistillaris*. L. "Large-clubbed *Clavaria*."

Simple, large, stuffed, fleshy, everywhere smooth, obovate-clavate, obtuse, yellow, then rufous.—*Fr. Epicr.* p. 578. *Huss.* i. t. 62. *Bull.* t. 244. *Sow.* t. 277. *Fl. Dan.* t. 1255. *Holms.* p. 12, with fig. *Sv. Bot.* t. 564, f. 1-2. *Krombh.* t. 54, f. 1-11. *Eng. Fl.* v. p. 175. *Ann. N.H.* no. 82. *Corda. Sturm.* t. 58. *Vent. S.M.* f. 114, 115. *Vent.* t. 41, f. 1, 3. *Fl. Boruss.* t. 395? *Bisch.* f. 3383.

In woods. Kent. King's Cliffe. [Mid. Carolina.]

Plant 6-12 in. high, varying somewhat in form, dull orange, dingy brown in decay.—*M. J. B.* Spores white, $\cdot 00043 \times \cdot 00023$ in.

988. Clavaria contorta. *Fr.* "Contorted Clavaria."

Simple, bursting through the bark, stuffed, between spongy and fleshy, somewhat twisted, rugose, obtuse, pruinose, watery yellow.—*Fr. Epicr. p.* 579. *Holms. p.* 29, *with fig. Fl. Dan. t.* 1852, *f.* 1. *Ann. N.H. no.* 291. *Kl. exs. no.* 1125.

On fallen branches. Rare. [Up. Carolina.]

The erumpent habit easily distinguishes this curious species.—*M. J. B.*

989. Clavaria Ardenia. *Sow.* "Lady Arden's Clavaria."

Simple, very long, thickened upwards, hollow, apex obtuse and excavated, ferruginous, then bright brown, base tomentose, not rooting.—*Fr. Epicr. p.* 579. *Sow. t.* 215. *Eng. Fl. v. p.* 175.

On fallen branches. Rare.

Above a span high, flexuous below, gradually incrassated upwards, smooth, opaque, apex acute in the young plant, then obtuse and bursting.—*Fries.* Sometimes rooting amongst leaves, and attaining a height of 9 in.; hollow; the whole plant being a thin, inflated skin. Spores very large, white, oval, with an apiculus at one end, 0006×00035 in.

990. Clavaria juncea. *Fr.* "Thread-like Clavaria."

Gregarious, slender, filiform, flaccid, nearly equal, fistulose, acute, pallid, then reddish-brown, base creeping and fibrillose.—*Fr. Epicr. p.* 579. *Desm. exs. no.* 310. *Fl. Dan. t.* 1257. *Mich. t.* 87, *f.* 7. *Bull. t.* 463, *f.* H. *Ann. N.H. no.* 52.

Amongst leaves in woods.

991. Clavaria acuta. *Sow.* "Acute Clavaria."

Quite simple, straight, white, clubs distinct, acuminate, pruinose; stem cylindrical, equal.—*Fr. Epicr. p.* 580. *Sow. t.* 333. *Eng. Fl. v. p.* 177.

On soil in garden pots. [Low. Carolina.]

Solitary. Very variable in size, from a few lines to an inch or more in length.

992. Clavaria uncialis. *Grev.* "Greville's Clavaria."

Quite simple, stuffed, tough, straight, obtuse, smooth, contiguous below, attenuated.—*Fr. Epicr. p.* 580. *Grev. t.* 98. *Eng. Fl. v. p.* 177. *Berk. exs. no.* 297.

On dead stems of *Umbelliferae*.

Gen. 46.

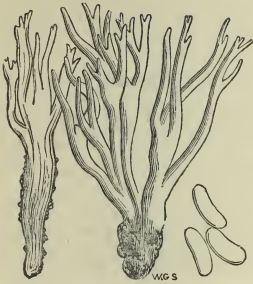
CALOCERA, Fr.

Fig. 91.

Gelatinous ; sub-cartilaginous when moist, horny when dry ; hymenium viscid. (Fig. 91.)

* Branched.

993. Calocera viscosa. Fr. "Clammy Calocera."

Branched, tough, rooting, even, linear, egg-yellow, branches straight, repeatedly dichotomous.—*Fr. Epicr. p. 581. Pers. Com. t. 1, f. 5. Schæff. t. 174. Eng. Fl. v. p. 177. Bail. t. 27. Kl. exs. no. 131. Corda. Icon. v. f. 74.*

On stumps in fir woods.

[Mid. Carolina.]

Generally caespitose, 1 in. or more high, root long, pale, branches round or compressed, equal, but little divided, known by its beautiful golden hue.—*Fries. Spores white.* (Fig. 91.)

** Caespitose.

994. Calocera tuberosa. Fr. "Tuberous Calocera."

Caespitose, simple, tough, even, linear, yellowish ; base tuberous and rooting.—*Fr. Epicr. p. 581. Sow. t. 199. Eng. Fl. v. p. 177.*

On stumps.

Not found since the time of Sowerby. Root a thick, strigose, subglobose tuber, giving out two or three simple linear subacute receptacles from the same base.—*M. J. B.*

995. Calocera cornea. Fr. "Horny Calocera."

Caespitose, rooting, even, viscid, orange-yellow ; clubs short, subulate, connate at the base.—*Fr. Epicr. p. 581. Desm. exs. no. 73. Batsch. f. 161. Fl. Dan. t. 1305, f. 2. Sow. t. 40. Bull. t. 463. f. 4. Eng. Fl. v. p. 178. Bisch. f. 3385.*

On stumps, especially oak. Common. [United States.]

Springing from cracks ; when fresh soft, when dry hard and horny.—*M. J. B.*

* * Simple, solitary.

996. Calocera stricta. *Fr.* "Straight Calocera."

Simple, solitary, elongated ; base blunt, linear, yellow, even when dry.—*Fr. Epicr. p.* 581. *B. & Br. Ann. N. H.* (1865), no. 1032. *Scop. Ann. iv. t. 1, f.* 50. *Kl. exs. no.* 1121.

On ash. Oct. Belvoir Castle.

Differs from *C. cornea* in its scattered mode of growth and slender habit. Occasionally two individuals grow from the same spot, but they are never broadly confluent at the base, as in the common species.—*M. J. B.*

997. Calocera striata. *Fr.* "Striate Calocera."

Simple, solitary, tough, lanceolate, acute, yellow, striate when dry.—*Fr. Epicr. p.* 582. *Hoffm. Fl. 9. t. 7, f.* 1. *B. & Br. Ann. N. H.* (1866), no. 1140. *Bisch. f.* 3386.

On a prostrate trunk. Mar. Batheaston.

Very rare everywhere. Spores $\cdot 0003 \times \cdot 00025$ in.

998. Calocera glossoides. *Fr.* "Soft Calocera."

Simple, solitary, somewhat tremellose, yellow ; clubs incrassated, obtuse, compressed ; stem round.—*Fr. Epicr. p.* 582. *Ann. N. H. no.* 371.

On decayed oak stumps. Rare. Leigh Wood, Bristol.

Composed of erect forked flocci. Spores oblong, oblique, somewhat incurved, attached by a short pedicle.—*B. & Br.*

Gen. 47.

TYPHULA, Fr.

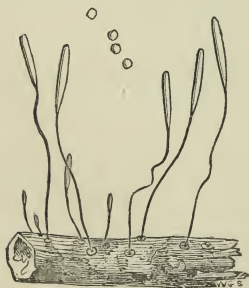


Fig. 92.

Stem filiform, flaccid ; club cylindrical, perfectly distinct ; hymenium thin, waxy.
(Fig. 92.)

* With tubercle at the base.

999. Typhula erythropus. *Fr.* "Red-stemmed Typhula."

Simple. Club cylindrical, smooth, white; stem nearly straight, dark red, inclining to black.—*Fr. Epicr. p.* 585. *Fl. Dan. t.* 2030, *f.* 1. *Desm. exs. no.* 263. *Bolt. t.* 112. *Grev. t.* 43. *Berk. exs. no.* 24. *Eng. Fl. v. p.* 181. *Schnitz. Sturm. t.* 12. *Bail. t.* 27.

On dead stems of herbaceous plants. Common.

Often growing on some species of *Sclerotium*; 3 lines 1 in. high; stem often flexuous.—*M. J. B.* (*Fig.* 92.)

1000. Typhula gyrans. *Fr.* "Nodding Typhula."

Simple, white. Club cylindrical, smooth; stem pubescent, pellucid.—*Fr. S.M.* 494. *Epicr. p.* 585. *Fckl. exs. no.* 1290. *Batsch. f.* 164. *Br. Bath. Trans.* 1870, *p.* 92.

On straw, &c. [Mid. Carolina.]

1001. Typhula incarnata. *Fr.* "Flesh-coloured Typhula."

Simple. Club cylindrical, elongated, smooth, flesh-coloured, attenuated into the subpilose continuous stem.—*Fr. Epicr. p.* 585. *Willd. Ber. t.* 7, *f.* 17. *Kl. exs. no.* 1313. *Clavaria phacorrhiza, Grev. S.C. Fl. t.* 93.

On dead herbaceous plants.

1002. Typhula phacorrhiza. *Fr.* "Bulb-rooted Typhula."

Simple; club cylindrical, smooth, pallid; stem flexuose, smooth, brownish.—*Fr. Epicr. p.* 585. *Berk. exs. no.* 23. *Sow. t.* 233. *Eng. Fl. v. p.* 180 (*partly*).

On dead herbaceous plants, &c.

Attached to *Sclerotium complanatum* and *S. scutellatum*. Often hairy at the base, drawn out and distorted from peculiar circumstances of situation.

1003. Typhula muscicola. *Fr.* "Moss Typhula."

Simple, subfiliform, smooth, slightly incrassated upwards, white; stem not distinct.—*Fr. Epicr. p.* 585. *Pers. Obs. ii. t.* 3. *f.* 2. *Nees. f.* 154. *Bisch. f.* 3388.

On the larger mosses.

Perhaps more properly a *Pistillaria*. Sometimes not a line high.

** Without tubercle at the base.

1004. Typhula Grevillei. Fr. "Greville's Typhula."

Simple, white, club incrassated, obtuse; stem capillary, pilose.—Fr. *Epicr.* p. 585. *Grev. t.* 49. *Bisch. f.* 3382. *Sturm.* iii. 3. t. 25. *T. gyrans*, Berk. *exs.* no. 66, 151. *Eng. Fl.* v. p. 180.

On dead leaves.

[Low. Carolina.]

1005. Typhula filiformis. Fr. "Thread-like Typhula."

Club incrassated, whitish; stem decumbent, somewhat branched, bright brown.—Fr. *Epicr.* p. 586. *Bull. t.* 448, f. 1. *Sow. t.* 387, f. 4. *Eng. Fl.* v. p. 181.

Amongst dead leaves.

Decumbent, creeping, free, subflexuous brown, cinereous brown, or brick-red.—*Eng. Fl.*

1006. Typhula gracilis. B. & Desm. "Slender Typhula."

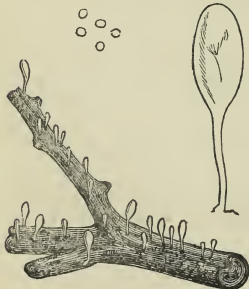
Club simple or forked, pallid, acute; stem short, distinct.—*Berk. Outl.* p. 285. *Ann. N.H.* no. 84, t. 8, f. 1.

On putrid leaves.

Head rough with spores and little prominent bristles. Very near to *Isaria*. Pallid, one line or more high, simple or forked, rugged with the fruit-bearing cells, which are frosted with the spores, and interspersed sometimes with short bristles, of which some of the upper ones support a small spore; tips often acuminate, and then nearly barren. Stem short, smooth, or bristly. Spores elliptic, having a sparkling appearance under a lens.—*M.J.B.*

Gen. 48.

PISTILLARIA, Fr.



Club shaped, waxy, then horny.
Structure cellular. (Fig. 93.)

Fig. 93.

1007. Pistillaria micans. *Fr.* "Glistening Pistillaria."

Obovate, obtuse, rose coloured; stem short, attenuated, whitish.—*Fr. Epicr. p.* 587. *Kl. exs. no.* 342. *Hoffm. Germ. t.* 7, *f.* 2. *Ehr. Ber. t.* 3, *f.* 2. *Eng. Fl. v. p.* 181. *Bisch. f.* 3438.

On dead thistles. Rare. Cambridge. [Mid. Carolina.]

Very minute, not a line high.

1008. Pistillaria culmigena. *Mont.* "Grass-stem Pistillaria."

Ovato-clavate, obtuse, pellucid, hyaline; stem distinct, very short.—*Fr. Epicr. p.* 587. *Mont. Ann. Sc. Nat.* 1836, *no.* 75, *t.* 12, *f.* 2. *Ann. N.H. no.* 85. *Berk. exs. no.* 152.

On stalks of grass. Jan.

1009. Pistillaria quisquiliaris. *Fr.* "Fern-stem Pistillaria."

Incrassated above, subcompressed, whitish, soft when recent, attenuated at the base, substipitate.—*Fr. Epicr. p.* 586. *Sow. t.* 334, *f.* 1. *Kl. exs. no.* 1312. *Berk. exs. no.* 25. *Eng. Fl. v. p.* 182.

On fern stems. Common.

Gregarious, 3-4 lines high, apex incrassated, sometimes flattened or bifid, quite even and smooth.—*Fries.* Often attached to a *Sclerotium*. (*Fig.* 93.)

1010. Pistillaria puberula. *Berk.* "Fibrous Pistillaria."

Obovate, ventricose, white; stem short, distinct, pellucid, tomentose.—*Berk. Outl. p.* 286. *Sow. t.* 334, *f.* 2. *P. ovata, Fr. Epicr. p.* 587. *Eng. Fl. v. p.* 181.

On dead *Pteris*. Rare. King's Cliffe.

Very minute, scarcely one line high; stem attenuated upwards, composed of many confluent fibres; receptacle obovate, but not broadly so.—*M. J. B.*

1011. Pistillaria pusilla. *Fr.* "Little Pistillaria."

Small, smooth, even, linear, white; stem scarcely distinct.—*Fr. Epicr. p.* 587. *Pers. Com. t.* 3, *f.* 6. *Eng. Fl. v. p.* 182.

On *Equisetum*, &c. Weymouth.

Slightly thickened upwards, not 1 line high, nodding when dry.—*M. J. B.*

1012. Pistillaria furcata. *Smith.* "Forked Pistillaria."

Clubs waxy, then tough, white or yellowish, compressed, broad at the apex, attenuated downwards, generally furcate and cæspitose.—*W. G. Smith, in litt.*

In greenhouses.

Clubs $1\frac{1}{4}$ in. high.

Order VI. TREMELLINI.

Whole plant gelatinous, with the exception occasionally of the nucleus. Sporophores large, simple or divided. Spicules elongated into threads.—*Berk. Outl.* p. 286.

Immarginate. Hymenium universal	<i>Tremella.</i>
Margined. Hymenium superior	<i>Exidia.</i>
Cup-shaped. Hymenium wrinkled	<i>Hirneola.</i>
Nucleus solid. Hymenium universal	<i>Nematelia.</i>
Homogeneous. Sporophores clavate, bifurcate	<i>Dacrymyces.</i>
Inflated. Hymenium smooth, then collapsed	<i>Apyrenium.</i>
Effused, thin, maculæform	<i>Hymenula.</i>
Patellæform. Hymenium discoid	<i>Ditiola.</i>

Gen. 49.

TREMELLA, Fr.

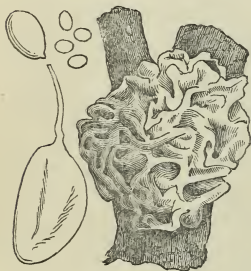


Fig. 94.

Gelatinous, tremulous, immarginate. Hymenium not papillate, surrounding the whole of the fungus.—*Berk. Outl.* p. 286. (Fig. 94.)

Sect. 1. Mesenteriformes.

1013. *Tremella fimbriata.* Pers. "Fringed Tremella."

Cæspitose, erect, corrugated, blackish-olive; lobes flaccid; margin incised, undulato-fimbriate.—*Fr. Epicr.* p. 588. *Bull. t.* 272. *Hoffm. t.* 7, f. 1. *Eng. Fl.* v. p. 215. *Berk. Outl.* p. 286.

On dead branches. Rare.

Of a soft, gelatinous consistence, almost watery within.

1014. *Tremella frondosa.* Fr. "Large pale Tremella."

Cæspitose; very large, even, pallid-yellow; base plicate; lobes gyroso-undulate.—*Fr. Epicr.* p. 588. *Bull. t.* 499, f. T. *Ann. N.H.* no. 810. *Berk. Outl.* p. 287.

At the base of living trees. Rare. Wotheorpe.

When fresh of a peculiar pale pinkish-yellow, often attaining a very large size.

1015. Tremella foliacea. P. "Foliaceous Tremella."

Cæspitose, flaccid, even, diaphanous, undulated, flesh coloured cinnamon; base plicate; spores subelliptic.—*Bull. t.* 406, *f. A. a. Berk. Outl. p.* 287. *T. ferruginea, Eng. Bot. 2nd Ed. t.* 1452. *Eng. Fl. v. p.* 215. *Ann. N.H. no.* 13.

On old stumps.

[United States.]

Very variable in colour, sometimes deep red-brown and sometimes violet. "Pliable and tender, becoming thin, shrivelled and shapeless when dry, reviving, though imperfectly, on the re-application of moisture; segments obtuse, lobed, and waved; surface finely pubescent or granulated; the granulations pale, giving the plant a velvet-like gloss, with brown, irregular specks, perhaps of a fructification among them."—*Eng. Bot.*

1016. Tremella lutescens. Fr. "Yellowish Tremella."

Cæspitose, tremulous, undulato-gyrose, white, then yellowish; lobes crowded, entire.—*Fr. Epicr. p.* 588. *Pers. Ic. & Desc. t.* 8, *f.* 9. *Bull. t.* 406, *C.D. t.* 499, *f. U.V. Berk. Outl. p.* 287. *Price. f.* 44. *Bisch. f.* 3403. *Bail. t.* 22.

On old stumps.

[United States.]

*Sect. 2. Cerebrinæ.***1017. Tremella mesenterica. Retz. "Orange Tremella."**

Expanded, ascending, somewhat tough, plicato-undulate, smooth, orange.—*Fr. Epicr. p.* 588. *Jacq. Misc. i. t.* 13. *Schæff. t.* 168. *Eng. Bot. 2nd Ed. t.* 709. *Bull. t.* 174. *Huss. i. t.* 27. *Ann. Sc. Nat. (1853), xix. t.* 11. *Eng. Fl. v. p.* 216. *Berk. Outl. p.* 287. *Gard. Chron. (1860), p.* 953, *fig. Price, f.* 26. *Bot. Zeit. 1859, t.* 11, *f.* 22.

On sticks in woods, &c. Common.

[United States.]

Varying considerably in size and form, sometimes quite flat and thin, but generally ascending and strongly lobed and plicate; when full grown consisting of branched, easily discernible filaments, surrounded by a dense stratum of spores.

(*Fig. 94.*)

1018. Tremella vesicaria. Bull. "Bladdery Tremella."

Firm, bladdery, much waved and wrinkled, erect, pallid, very viscid within; sporophores globose; spores broad, oblong.—*Bull. t.* 427, *f.* 3. *Berk. Outl. p.* 287. *Eng. Bot. Ed. ii. t.* 2451. *Ann. N.H. no.* 724.

On the ground. Rare.

[Pennsylvania.]

Spores $\cdot 0004 \times \cdot 00025$ in.

1019. Tremella moriformis. Berk. "Mulberry Tremella."

Conglobated, sinuated, mulberry-black, opaque, firm.—*Berk. Outl. p. 287. Eng. Bot. Ed. ii. t. 2451. Price, f. 21? Dacrymyces moriformis. Fr. Epicr. p. 592. Eng. Fl. v. p. 219.*

On the ground. Rare. [Low. Carolina.]

Sessile in roundish or oblong tumid, sinuous masses of various size, not unlike mulberries in appearance, except being coal black. Internally of a deep rich purple, substance fleshy, attached by strong central roots. When dried between paper a violet stain is communicated to whatever the plant touches.—*Smith.*

1020. Tremella albida. Hud. "Whitish Tremella."

Expanded, tough, undulated, even, or somewhat gyrose, pruinose, whitish, at length brownish.—*Fr. Epicr. p. 589. Eng. Bot. t. 2117. Bull. t. 386, f. A. Eng. Fl. v. p. 216. Berk. Outl. p. 287. Price, f. 50. Bon. t. 12, f. 246.*

On dead branches. Common. [United States.]

It bursts through cracks in the bark, and then spreads itself in horizontal or clustered, rounded obtuse, scalloped masses, white, semi-pellucid, extremely gelatinous, and tender when young, afterwards turning yellowish.—*Smith.*

1021. Tremella intumescens. Sow. "Contorted Tremella."

Subcæspitose, rounded or conglomerate, soft, brown, when dry blackish-brown, obsoletely punctuate, somewhat tortuous and lobed.—*Fr. Epicr. p. 589. Berk. Outl. p. 288. Eng. Bot. Ed. ii. t. 1870. Eng. Fl. v. p. 217.*

On trunks of fallen trees. Apethorpe. [United States.]

In perfection in very wet weather only, when it forms numerous soft and pulpy clusters, twisted and tumid, like the intestines of some animal, of a darkish dull brown, but with a shining surface, obscurely dotted; inside paler and almost white, except that when cut longitudinally brown vertical streaks are discernible near the surface.—*Smith.*

1022. Tremella indecorata. Somm. "Dingy Tremella."

Sessile, rounded, moist, convex, plicate, opaque, black-brown, dingy.—*Fr. Epicr. p. 589. Kl. exs. no. 822. Ann. N.H. no. 725, 810*. Berk. Outl. p. 283.*

On willows. Mossburnford.

Dark pitchy brown when dry, dirty cinereous when swollen with moisture.—*M. J. B.*

Sect. 3. Coryne—erect, sub-clavate, subviscid.

1023. Tremella clavata. *P.* "Clavate Tremella."

Solitary, simple, incrassated, reddish flesh-colour, blackish at the base.—*Fr. Epicr. p.* 589. *Pers. Ic. Pict. t.* 10, *f.* 1. *Eng. Fl. v. p.* 217. *Berk. Outl. p.* 288.

On stumps. Rare. Appin.

About 1 in. high, 2 lines broad, blackish below, and slightly twisted.—*M. J. B.*

Tremella sarcoides. *Sm.* See *Bulgaria sarcoides*, of which it is a condition.

1024. Tremella tubercularia. *Berk.* "Horny Tremella."

Erumpent; stem short, cylindrical, head pileate, dirty white, nearly black when dry.—*Berk. Outl. p.* 288. *Tubercularia albida*, *Eng. Fl. v. p.* 354. *Coryne turbinata*, *Ann. N.H. no.* 165.

On fallen branches. Oct.

Left upon the wood when the bark falls off, when dry it has a peculiar, semi-transparent, horny appearance.

Sect. 4. Phyllopta—cartilaginous, depressed, or effused.

1025. Tremella torta. *Willd.* "Twisted Tremella."

Minute, round, depressed, gyroso-tuberculate, yellow or orange.—*Berk. Outl. p.* 288. *Ann. N.H. no.* 372.

On decorticated oak. Common.

Two or three lines across.

1026. Tremella versicolor. *B. & Br.* "Parasitic Tremella."

Minute, orbicular, orange, at length brown.—*Ann. Nat. Hist. ser. ii. vol. xiii. p.* 406, *no.* 726. *Berk. Outl. p.* 288.

On *Corticium nudum*. Feb.

Forming minute orange, tear-like, convex spots, on the hymenium of the *Corticium*, paler when young, at length assuming a rufous tinge. In young plants the delicate hyaline threads are terminated by four globules, which ultimately branch, forming moniliform threads.—*B. & Br.*

1027. Tremella viscosa. *P.* "Viscid Tremella."

Effused, resupinate, hyaline, at first white, undulated.—*Pers. Obs. ii. p.* 18. *Berk. Outl. p.* 288. *Ann. Nat. Hist. ser. ii. vol. xiii.*

t. 15, f. 4. Corticium viscosum, Fr. Thelephora viscosa, Eng. Fl. v. p. 171.

On dead wood.

We find globose sporophores, bearing three or four elongated sterigmata, and oblong, obliquely attached spores, which sometimes contain one or two nuclei.—*B. & Br.*

1028. Tremella epigæa. B. & Br. "Ground Tremella."

Effused, gelatinous, gyroso-plicate, white.—*Ann. Nat. Hist. ser. ii. vol. 2, p. 266, no. 373. t. 9, f. 3. Berk. Outl. p. 289.*

On the ground. Rare. Leigh wood, Bristol.

Spreading over the naked soil, on which it forms a thin white stratum, the surface of which is gyroso-plicate, and dusted with the white spores; the inner substance is very soft and gelatinous.—*M. J. B.*

Gen. 50.

EXIDIA, Fr.

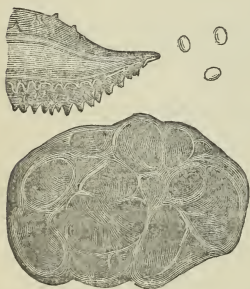


Fig. 95.

Tremulous, margined, fertile above and granular, barren below.—*Berk. Outl. p. 289. (Fig. 95.)*

1029. Exidia recisa. Fr. "Truncate Exidia."



Fig. 96.

Very soft, truncate, plane, costate, sub-repand, amber-brown, punctato-scabrous beneath; stem very short, excentric, oblique.—*Fr. Epicr. p. 590. Sturm. t. 13. Eng. Bot. Ed. ii. t. 1819. Eng. Fl. v. p. 218. Berk. Outl. p. 289. Bisch. f. 3399. Kl. exs. no. 330.*

On dead branches of willows. Common. [Low. Carolina.]
About 1 in. broad; spores oblong, obtuse, curved. (Fig. 96.)

1030. Exidia glandulosa. *Fr.* "Witches' Butter *Exidia*."

Effused, flattened, thick, undulated, blackish, spiculose with conical papillæ, cinereous beneath, and somewhat tomentose.—*Fr. Epicr. p.* 591. *Bull. t.* 420, *f.* 1. *Fl. Dan. t.* 884. *Eng. Bot. Ed. ii. t.* 2448, 2452. *Huss. i. t.* 42. *Eng. Fl. v. p.* 218. *Berk. Outl. p.* 289.

On dead branches of oak. Common. [United States.]

Varying in colour from whitish to brown, and deep cinereous, at length black; generally somewhat turbinate, slightly plicate below, much wrinkled above, sometimes thin; substance tender within, firmer towards the hymenium, composed of gelatine interlaced with very slender branched filaments, covered with oblong, obtuse, curved spores. Beneath rough like crape, with minute parallel papillæ.—*M. J. B.* (*Fig. 95.*)

1031. Exidia saccharina. *Fr.* "Larch *Exidia*."

Tuberculose, gyroso-undulate, thick, tawny-cinnamon, papillæ rare and scattered.—*Fr. Epicr. p.* 591. *Ann. N.H. no.* 811. *Berk. Outl. p.* 289. *Kl. exs. no.* 1611.

On larch. Rare. Mossburnford.

Gen. 51.

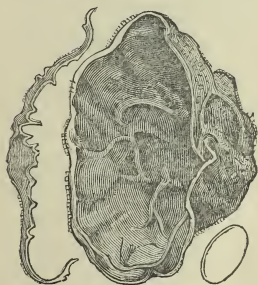
HIRNEOLA, Fr.

Fig. 97.

Gelatinous, cup-shaped, horny when dry; hymenium often more or less wrinkled; interstices even, without papillæ; outer surface velvety.—*Berk. Outl. p.* 289.

(*Fig. 97.*)

1032. Hirneola Auricula-Judae. *Berk.* "Jew's-ear *Hirneola*."

Thin, concave, flexuose, blackish, venoso-plicate everywhere, tomentose beneath, cinereous-olive.—*Berk. Outl. p.* 289, *t.* 18, *f.* 7. *Huss. i. t.* 53. *Exidia Auricula Judae*, *Fr. Epicr. p.* 590. *Nees. Pl. Off. with fig. Bolt. t.* 107, *Tremella. Bull. t.* 427, *f.* 2. *Eng. Bot. Ed. ii. t.* 2147. *Batt. t.* 3, *f.* T. *Eng. Fl. v. p.* 217. *Corda. Sturm. t.* 6. *Harz. t.* 45.

On elder and elm. Common. [United States.]

1-3 in. or more broad; upper substance corrugated, the plaits branching from the middle part, where they are strongest, and somewhat convoluted, so as to give an idea of a human ear; when the plant grows on a perpendicular stump or tree it turns upwards.—*Smith*. (Fig. 97.)

Gen. 52.

NÆMATELIA, Fr.

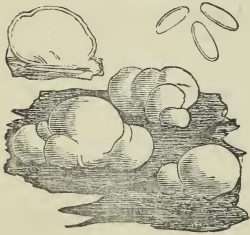


Fig. 98.

Nucleus solid, heterogeneous, covered with a gelatinous stratum, which is everywhere clothed with the hymenium.—*Berk. Outl.* p. 290. (Fig. 98.)

1033. Næmatelia encephala. Fr. "Flesh-coloured Nematelia."

Subsessile, pulvinate, plicato-rugose, pallid flesh colour, at length brownish.—*Fr. Epicr.* p. 591. *Willd. Bot. Mag.* i. t. 4, f. 14. *Eng. Fl.* v. p. 219. *Ann. N.H.* no. 292. *Berk. Outl.* p. 290. *Berk. exs.* no. 291.

On pine rails. Rare. Loch Lomond, Wales.

[Mid. & Up. Carolina.]

Solitary or clustered, more or less pulvinate; 4-6 lines broad and thick, firm, when fresh of a dead flesh colour, when dry reddish-brown; nucleus large, hard, white; base stem-like.—*Fries*. (Fig. 98.)

1034. Næmatelia nucleata. Fr. "Nucleate Nematelia."

Sessile, flat, somewhat gyrose, yellowish-brown.—*Fr. Epicr.* p. 592. *Berk. Outl.* p. 290.

On rotten wood. Rare.

[United States.]

Sometimes confounded with *Tremella albidia*, from which it differs in the presence of a small white nucleus.—*M. J. B.*

1035. Næmatelia virescens. Corda. "Greenish Nematelia."

Small, roundish, depressed, gyroso-tuberculate, or quite even, green.—*Ann. N.H.* no. 374. *Fl. Dan.* t. 1857, f. 1. *Dacrymyces virescens*, *Fr. Epicr.* p. 592. *Corda.* iii. f. 90. *Berk. Outl.* p. 290.

On furze branches. Common.

Gen. 53.

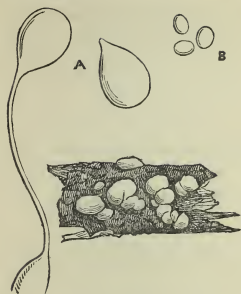
DACRYMYCES, Nees.

Fig. 99.

Homogenous, gelatinous. Conidia disposed in moniliform rows; sporophores clavate, at length bifurcate.—*Berk. Outl. p. 290.* (Fig. 99.)

1036. Dacrymyces violaceus. *Fr.* "Violet Dacrymyces."

Small, compact, somewhat compressed, gyrose, violet.—*Fr. Epicr. p. 592. Eng. Fl. v. p. 219. Berk. Outl. p. 290.*

On trunks of pear trees. Rare. [Mid. Carolina.]

Erumpent, gregarious; 3-4 lines long, 1 line thick, black when dry.—*Fries.* Very much like the tartar of port-wine.—*Relhan.*

1037. Dacrymyces sebaceus. *B. & Br.* "Waxy Dacrymyces."

Whitish, waxy, subrotund; spores ovate-triangular; filaments variously branched, clavate above, here and there resolved into globose conidia.—*Br. Bath. Trans. 1870, p. 96.*

On ash and maple twigs. Winter.

Conspicuous in wet weather, 2-4 lines broad; spores (0.0005×0.0003 in.) 0.0125×0.0075 mm. Besides the spores other bodies occur resembling those of a *Fusisporium*, which appear to grow from the same threads, but may possibly be parasitic on the *Dacrymyces*.—*C. E. B.* (Fig. 99.)

1038. Dacrymyces deliquescentis. *Dub.* "Yellow Dacrymyces."

Pulvinate, slightly waved, and plicate yellow. Spores triseptate.—*Bull. t. 455, f. 3. Price, f. 58. Ann. Sc. Nat. 1853, xix. t. 12, 13. Ditiola nuda, B. & Br. Ann. N.H. ser. 2, vol. ii. p. 267, t. 9, f. 4, no. 375 & no. 728. Septocolla adpressa, Bon. f. 274. Berk. Outl. p. 290.*

On fallen pine branches.

[Up. Carolina.]

Sometimes on pine rails, as well as *D. stillatus*, but easily distinguished from that by its larger size, more cæspitose habit, and paler yellowish colour. It often resembles very much a cæspitose, waved, yellow *Peziza*, growing in clusters, sometimes an inch or more in length. The spores are triseptate, slightly curved and obtuse.

1039. *Dacrymyces stillatus*. Nees. "Orange *Dacrymyces*."

Nearly round, convex, at length plicate, yellow, then orange, colour persistent; spores multiseptate.—*Fr. Epicr. p.* 592. *Grev. S. C. F. t.* 159. *Berk. Outl. t.* 18, *f.* 8. *Eng. Fl. v. p.* 220. *Cooke. exs. no.* 336.

On pine rails.

[United States.]

Distinguished by its persistent orange colour from *D. deliquescens*, it is also smaller, more scattered, less depressed, and firmer. Generally barren.

1040. *Dacrymyces chrysocomus*. Tul. "Yellow-fir *Dacrymyces*."

Small, yellow, gelatinous, cup-shaped, at length turning pale.—*Berk. Outl. p.* 291. *Peziza chrysocoma, Bull. t.* 376, *f.* 2. *Eng. Fl. v. p.* 205.

On fir branches.

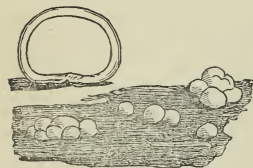
Gen. 54.**APYRENIUM, Fr.**

Fig. 100.

Stroma gelatinoso-carnose, fibroso-floccose, hollow, inflated; hymenium smooth, when dry collapsed, pubescent.—*Berk. Outl. p.* 291.

(Fig. 100.)

1041. *Apyrenium lignatile*. Fr. "Wood-loving *Apyrenium*."

Subglobose, always hollow, mostly somewhat lobed, pallid yellowish, or reddish white.—*Fr. El. ii. p.* 39. *Berk. Outl. p.* 291. *Pyrenium lignatile, Eng. Fl. v. p.* 221. *Grev. t.* 276.

On rotten wood. Appin.

(Fig. 100.)

1042. *Apyrenium armeniacum*. B. & Br. "Apricot-coloured *Apyrenium*."

Receptacle lobate, sub-gelatinous, apricot-colour; spores obovate, enucleate, borne at the tips of branched threads.—*B. & Br. Ann. N.H. (1866), no.* 1141, *pl. ii., f.* 2.

On oak sticks. Oct. Batheaston.

Spores $\cdot 0003 \times \cdot 0005$ in. long. This may possibly be a condition of *Hypocrea gelatinosa*.

Gen. 55.

HYMENULA, Fr.

Effused, very thin, maculæform, agglutinate, between waxy and gelatinous.—*Berk. Outl. p. 291.*

1043. *Hymenula punctiformis.* *B. & Br.* "Point-like Hymenula."

Gelatinous, punctiform, pallid, somewhat undulated; spores elliptic.—*Ann. Nat. Hist. no. 729. Berk. Outl. p. 291.*

On decorticated fir poles. Sept. Batheaston.

Punctiform, gelatinous, dirty white or very pale umber, slightly tinged with yellow, $\frac{1}{4}$ line broad, slightly undulated, consisting of erect simple threads; spores minute ($\cdot 0002$ in.) $\cdot 005$ mm. long. It has somewhat the appearance of *Peziza vulgaris*.—*B. & Br.*

Gen. 56.

DITIOLA, Fr.

Fig. 101.

Orbicular, margined, patellæform. Hymenium discoid, gelatinous, at first veiled.—*Berk. Outl. p. 291. (Fig. 101.)*

1044. *Ditiola radicata.* *Fr.* "Rooting Ditiola."

Disc nearly plane, golden-yellow; stem thick, villous, white, rooting.—*Fr. S.M. ii. p. 170. Fl. Dan. t. 2338, f. 1. Bisch. f. 3375. Bail. t. 22. A. & S. t. 8, f. 6. Eng. Fl. v. p. 210. Ann. N.H. no. 729*.*

On pine wood. East Bergholt.

(Fig. 101.)

Family II. GASTEROMYCETES.

Hymenium more or less permanently concealed, consisting in most cases of closely-packed cells, of which the fertile ones bear naked spores on distinct spicules, exposed only by the rupture or decay of the investing coat or peridium.—*Berk. Outl.* p. 292.

The fructification is essentially produced within the surrounding tissues. A large portion are remarkable for the drying up of the hymenial tissues to such an extent that the cavity contains a dusty mass of spores, mixed more or less with threads, or the shrivelled remains of the constituent tissues, but this is not without exception. Some, again, are of a fleshy consistence when young, while others, in an early stage of growth, exhibit little more than an apparently inorganised mass of pulpy matter. One or two genera exhibit beautiful spiral threads. A few are edible.—*Berk. Introd.* p. 333.

Hymenomycetous—

- Subterraneous, naked or enclosed . . . *Hypogæi.*
- Terrestrial. Hymenium deliquescent . . . *Phalloidei.*
- Peridium enclosing sporangia, containing spores *Nidulariacei.*

Coniospermous—

- Cellular at first. Hymenium drying up into a dusty mass of threads and spores *Trichogastres.*
- Gelatinous at first. Peridium containing at length a dusty mass of threads and spores *Myxogastres.*

Order VII. HYPOGÆI.

Hymenium permanent, not becoming dusty or deliquescent, except when decayed. Subterranean.—*Berk. Outl.* p. 292.

Analogous to TUBERACEI in many particulars, except that the spores are *not* contained in asci.

Peridium adhering to creeping, branched fibres, which traverse its surface—

- Cells at first pulpy. Spores smooth. . . . *Melanogaster.*
- Cells at first empty. Spores smooth . . . *Rhizopogon.*

Peridium fleshy or thin. Cells at first empty—

- Without distinct base. Spores echinulate . . *Hydnangium.*
- With absorbing base. Spores various . . . *Hymenogaster.*

Peridium cottony. Cells at first empty—

- Spores rough *Octaviania.*

Peridium separable. Cells at first empty—

- Substance cartilagino-glutinous. Spores minute *Hysterangium.*

Gen. 57.

OCTAVIANIA, Vitt.

Fig. 102.

Peridium continuous or cracked, cottony, running down into the sterile base. Trama byssoid, easily divisible. Fruit-bearing cavities or cells at first empty. Spores rough.—*Vitt. Tub. p. 15. Tul. Hyp. p. 77. Berk. Outl. p. 292.* (Fig. 102.)

1045. Octaviania asterosperma. Vitt. "Star-spored Octaviania."

Globose, dirty white, then in parts, æruginous-blue and black; sterile base rather thick; spores spherical, deep ferruginous, echinate.—*Berk. Outl. p. 292. Tul. Hyp. t. 11, f. 1. Vitt. Tub. t. 3, f. 7. Tul. Ann. Sc. Nat. xix. t. 17, f. 21. Corda. Ic. vi. t. 7, f. 64. Corda. Anl. t. D. f. 45, no. 5, 6.*

Underground, adhering by the mycelium to twigs, &c. West of England.

The smell is just like the pungent odour of some *Ichneumon* or small bee. Spores ('0004 in.) '0128 mm. (Fig. 102, spores.)

1046. Octaviania Stephensii. Tul. "Stephens's Octaviania."

Irregular, oblong, externally rufous, plicato-rugose at the base, cribose, white within; milky, at length, when exposed to the air, rufous; spores globose, at length echinulate.—*Berk. Outl. p. 292. Tul. Hyp. t. 21, f. 6. Corda. vi. f. 67. Hydnangium Stephensii, Berk. Ann. N.H. xiii. p. 352, no. 300.*

Underground, or half buried. Aug. Clifton.

About $\frac{3}{4}$ in. diameter, oblong, attached by a branched fibrous root, smooth, not cracked, dark rufous, curiously plicate at the base, and cribose; within white, yielding when cut a white milky fluid; substance when cut and exposed to the air soon acquiring a red tinge, which is not, however, permanent, and in young specimens vanishes almost entirely in drying, in which state the hymenium is cream-coloured; cells minute; spores at first irregularly globose, with a broad rugulose border, somewhat after the fashion of the young spores of *Scleroderma*, at length echinulate. This species is remarkable for its milky juice, smooth dark peridium, and plicate base. The smell was slight.—*M. J. B.* Spores '0096 \times '0128 mm. ('00035 \times '0004 in.) diameter.

Gen. 58.

MELANOASTER, Corda.

Fig. 103.

Peridium adhering to creeping branched fibres which traverse its surface, without any proper or distinct base; cells at first filled with pulp; spores smooth, mostly dark. —Corda. *Sturm.* iii. p. i. *Ic. Fung.* v. p. 23. *Tul. Hyp.* p. 92. *Berk. Outl.* p. 293. (Fig. 103.)

1047. Melanogaster variegatus. Tul. "Red Truffle."

At first ochraceous, then reddish-ferruginous, minutely downy; walls of the cells dirty white, yellowish or orange; pulp black; spores minute.—*Tul. F. Hyp.* t. ii. f. 4, t. xii. f. 6. *Bull.* t. 479. *Berk. Outl.* p. 293. *Vitt. Tub.* t. iii. f. 4. *Corda. Ic.* vi. t. 9, f. 91.

var. Broomeianus. Veins pale, sometimes becoming red when dry, sometimes unchangeable. *M. Broomeianus*, *B. Ann. N.H.* no. 301. *Tuber moschatum*, *Sow.* t. 426. *Berk. exs.* no. 285. *Tul. Ann. Sc. Nat.* xix. t. 17, f. 23. *Corda.* vi. f. 90.

Under beech trees, Lombardy poplars, &c. South West of England.

Sold in the market at Bath under the name of the Red Truffle, and eaten there in preference to the Common Truffle. In tufts of five or six together, and several of such tufts under each tree, half of them being in general exposed, and half beneath the soil; when fresh it is minutely tomentose, of a reddish ochre, which becomes less bright when handled or badly dried; the veins bright yellow in the typical form, palé in the variety, sometimes becoming red when dry, sometimes unchangeable; at first white within, then very pale yellow, at length fuliginous. The spores are elliptic and minute, without any papillæ, they contain one or two globose nuclei; when ripe spherical bodies of the size of the nuclei are often mixed with the spores.—*M. J. B.* Spores .0064 mm. long, .004 mm. broad (.00025 × .00015 in.).

1048. Melanogaster ambiguus. Tul. "Stinking Melanogaster."

Very fœtid, globose, dirty olive, nearly even; walls of cells white, reddish when exposed to the air; pulp black; spores large, obovate. *Tul. Hyp.* t. 2, f. 5, t. 12, f. 5. *Berk. Ann. N.Hist.* no. 302. *Berk. Outl.* p. 293. *Corda. Ic.* vi. t. 9, f. 88. *Octaviana ambigua*,

Vitt. Tub. p. 18, t. 4, f. 7. Hyperrhiza liquaminosa, Klot. Fl. Bor. t. 468. Lycoperdoides, Mich. t. 98, f. 3.

Under fir trees. West of England. Apethorpe.

Known at once by its much larger ovate spores with a papilla at the apex, and its abominable smell, which resembles that of assafoetida. A single specimen in a room is so strong as to make it scarcely habitable. The walls of the cells when cut are whitish, but soon become red; this is not constantly the case.—*M. J. B.*

var. β. intermedius. Spores obovate, obtuse and even, very rarely slightly papillate.—*Berk. Ann. N.H. no. 302.*

This form, or more probably species, was found at Spy Park in August, by C. E. Broome. It is as large as *M. variegatus*, of which it has the bright rusty colour, but the spores are much larger, equalling in size those of the typical form of this species, though of a different form. There is scarcely ever the slightest indication of a papilla, and they are obovate, with a single globose nucleus. The smell is also similar. The walls of the cells are yellowish, and are red in dry specimens.—*M. J. B.* Spores $\cdot 013 \times \cdot 016$ mm. long, $\cdot 008$ mm. broad ($\cdot 0005 \times \cdot 0003$ in.).
(*Fig. 103, section magd.*)

Gen. 59.

HYDNANGIUM, Wallr.



Peridium fleshy or membranaceous. Sterile base none. Trama vesicular. Cells at first empty, then filled with spores. Spores echinulate.—*Tul. Hyp. p. 74. Berk. Ann. N.H. xiii. p. 351. Outl. p. 293. Corda. Ic. v. p. 28.*
(*Fig. 104.*)



Fig. 104.

1049. *Hydnangium carotæcolor.* *Berk.* "Orange *Hydnangium.*"

Oblong, rootless; peridium thin, rugulose, brick-red, orange within; spores subelliptic, pale, echinulate.—*Berk. Ann. N.H. xiii. p. 351. Berk. Outl. p. 293, t. 20, f. 1. Tul. Hyp. t. 21, f. 4.*

Under trees. Sept. Nov. Bristol.

Oblong, $\frac{3}{4}$ of an inch in diameter, externally slightly tomentose, pale orange-red, fleshy, but by no means deliquescent, rootless; peridium thin, at length rugulose, within minutely cellular; substance of a beautiful orange-red; cells hollow, clothed with obtuse bi-sporous sporophores, and slender cystidia; the cells are also traversed from wall to wall by slender occasionally branched threads. Spores subelliptic, strongly echinulate, supported on short but distinct sterigmata.—*M. J. B.* Colour exactly that of a carrot, communicating to paper a lemon-coloured stain. Spores $\cdot 0096 \times \cdot 0128$ mm long, $\cdot 007 \times \cdot 008$ mm, broad ($\cdot 0004 \times \cdot 0003$ in.).

(*Fig. 104, spores magd.*)

Gen. 60. HYSTERANGIUM, Vitt.

Peridium indehiscent, distinct, separable. Cavities at first empty. Substance cartilagineo-glutinous. Spores minute.—*Vitt. Tub. p. 13. Berk. Ann. N.H. xiii. p. 350. Outl. p. 294. Tul. Hyp. p. 80.*

1050. Hysterangium nephriticum. Berk. "Grey Hysterangium."

Depressed, springing from a white, flat, branched, membranous mycelium; peridium firm, elastic, distinct, tomentose, substance pale blue or grey, here and there greenish; cavities radiating from the base; spores minute, oblong, pale clay-colour.—*Ann. N. Hist. xiii. p. 350, no. 298.*

Under trees. Feb. Clifton.

About $\frac{1}{2}$ -1 in. across, gregarious, sometimes confluent, snow-white, downy, seated on a white, flat, branched mycelium, which penetrates deeply into the soil, and is attached at various points to the peridium; peridium firm, elastic, easily separating from the fructifying mass, but in the process of drying in young plants, adhering closely to it; in older plants often separating entirely; when rubbed or cut contracting sometimes a pale rufous tinge; substance firm, cartilagineo-glutinous, proceeding from the base and radiating into the mass, of a pale blue or grey in parts, with a green tinge; in very young specimens there is a tinge of very pale pink; cells irregular, minute, sometimes straight and radiating, clothed with very pale, argillaceous, oblong spores, and emitting from their walls irregular threads. As the plant dries the blue and green tints vanish almost entirely, and the mass is of a very pale clay-colour from the spores. The central mass contracts extremely, and the outer surface becomes more or less irregular. Smell at first like that of some *Hypericum*, then exactly that of a decaying puff-ball.—*M. J. B. Spores* '0128 mm. long, '0064 mm. broad ('0004 \times '00025 in.).

1051. Hysterangium Thwaitesii. B. & Br. "Thwaites's Hysterangium."

Subglobose, white, rufous when bruised; peridium membranaceous; spores oblong, apiculate.—*B. & Br. Ann. N.H. ser. ii. vol. ii. p. 267, no. 377.*

Under trees. Aug. Bristol.

Mycelium white, fibrillose, not much disposed to form membranous expansions, spreading for some distance. Sporangium globose, or slightly irregular, white, slightly silky, when rubbed or exposed to air assuming a rufous tinge. Peridium membranaceous, not so thick as in *H. nephriticum*, though, as in that species, it sometimes separates when dry; rufous when divided. Cells brownish-olive; spores oblong, apiculate, differently shaped from those of the other species.—*M. J. B. Spores* '0192 mm. long, '0064 mm. broad ('0006 \times '00025 in.).

Gen. 61.

RHIZOPOGON, Tul.

Fig 105.

Peridium continuous or cracked, adhering to creeping, branched fibres, which traverse its surface. Cavities distinct, at first empty. Spores smooth, oblong-elliptic.—*Tul. Hyp. p. 85. B. & Br. Ann. N.H. xviii. p. 76. Berk. Outl. p. 294. (Fig. 105, Rhizopogon luteolus.)*

1052. Rhizopogon rubescens. Tul. "Reddish Rhizopogon."

White, then reddish, and at length livid-olive, furnished with a few fibrillæ; substance very lacunose, dirty white, then olive; cavities always empty.—*Berk. Outl. p. 294. Tul. Hyp. t. 2, f. i. t. 11, f. 4. Melanogaster Berkeleyanus, Br. Ann. N. H. (1845) p. 41. Corda. Ic. vi. t. 9, f. 90. Sturm. iii. t. 11.*

In sandy fir woods. Chudleigh. [Low. & Mid. Carolina.]

This species grows gregariously in sandy fir woods; when young it is almost transparent, and resembles young *Cynophallus caninus*, being of a pure white, and furnished with white roots, which proceed from a mycelium that spreads sometimes an inch or two; in this state it turns pink on being touched; in a more advanced stage it is yellow, but even then it has here and there a pink tinge. The smell is very much like that of *Melanogaster ambiguus* when old, but when young it has an acid smell like that of sour ham. It rapidly decays into a brown, fœtid, pulpy mass.—*M. J. B. Spores .007-.009 mm. long, .003 mm. broad (.00027 to .00035 × .00011 in.).*

Gen. 62.

HYMENOGASTER, Tul.

Fig 106.



Fig. 107.

Globose, fleshy, firm, or rather soft. Peridium fleshy or thin, running down into an absorbing base. Cavities at first empty, radiating or irregular. Trama composed of elongated cells, but not of byssoid flocci, and therefore not easily separable. Spores various.—*Vitt. Tub. p. 20. Tul. Hyp. p. 63. Berk.*

Ann. N.H. xiii. p. 346, xviii. p. 74. Berk. Outl. p. 295.

- 1053. Hymenogaster Klotschii.** *Tul.* "Klotsch's Hymenogaster."

Obovate, fibrillose at the base, dirty white, within dull rufous ochre; spores small, elliptic, obtuse at either extremity, nearly even.—*Berk. Outl.* p. 295. *Tul. Hyp. t.* 10, *f.* 12. *H. albus*, *B. & Br. Ann. N.H. no.* 296. *Hymenangium album*, *Kl. Fl. Bor. t.* 466. *Rhizopogon albus*, *Eng. Fl. v.* p. 229. *Bail. t.* 27. *Kl. exs. no.* 1967.

Amongst soil. Glasgow.

Sowerby's *Tuber album*, t. 310, quoted in *Eng. Fl.* as above, is still uncertain. Spores '016 mm. long, '0095 mm. broad ('0005 × '00035 in.).

- 1054. Hymenogaster muticus.** *B. & Br.* "Cracking Hymenogaster."

Globose, quite white when young, then tinged with brown and cracked, pale yellow-brown within; spores obovate, oblong, very obtuse.—*B. & Br. Ann. N. H. ser. ii., vol. ii., p.* 267. *Berk. Outl.* p. 295. *Tul. Hyp. t.* 10, *f.* 7.

Under trees. Nov. Bristol.

About an inch in diameter, almost destitute of any absorbing base, globose, scarcely at all lobed. When young pure white, but changing with age, especially when rubbed, to brownish, and at length much cracked. Substance pale yellowish-brown, rather firm and dry; cells loose, but smaller than in some of the allied species, clothed with reddish-brown obovate oblong spores, which for the most part are quite obtuse, without the slightest trace of an apiculus, and contain two or three variously sized oil globules. Smell very slight. Distinguished from all its more immediate allies by its peculiar spores.—*M. J. B.* Spores '023 mm. long, '013 mm. broad ('0008 × '0004 in.).

- 1055. Hymenogaster luteus.** *Vitt.* "Yellow Hymenogaster."

Peridium very thin, soft and silky, white, then brownish, bright yellow within; spores even, ovate, or elliptic, oblong, yellow.—*B. & Br. Ann. N.H. no.* 294. *Tul. Hyp. t.* 1, *f.* 3. *Vitt. Tub. p.* 22, *t.* 3, *f.* 9. *Corda. Ic. vi. t.* 8, *f.* 76.

In woods. Rudloe, Wilts.

Distinguished by its bright permanently yellow hymenium, and smooth, papillate, very variable, often triangular spores. The tint varies according to the quantity of spores. Some specimens have but little scent; others, especially the larger ones, are powerfully foetid.—*B. & Br.* Spores '019-'023 mm. long, '0096 mm. broad ('0007 to '0008 × '0004 in.).

- 1056. Hymenogaster decorus.** *Tul.* "Comely Hymenogaster."

Roundish, dirty-white, here and there yellow, rather firm, within lilac-brown and at length blackish-violet; absorbing base obsolete; sporophores long, somewhat filiform; spores elliptic,

obtuse or obtusely apiculate, rugulose, ochraceous, then brown. *Berk. Outl. p. 295. Tul. Hyp. t. 10, f. 9. Ann. Sc. Nat. xix. t. 17, f. 4-8.*

In woods. Epping Forest, Chudleigh, &c.

This is a much firmer species than *H. tener*, darker within, with larger spores; but it is especially distinguished by its elongated filiform sporophores, which project far beyond the surface of the hymenium.—*M. J. B.*

1057. *Hymenogaster vulgaris.* Tul. "Common Hymenogaster."

Roundish, irregular, dirty white, soon soiled, softish, within dirty white, then dark-brown; sterile base minute; spores oblong or lanceolate, oblong-acute, attenuated at the base, dark brown when mature; surface uneven.—*Berk. Outl. p. 296. Tul. Hyp. t. 10, f. 13. Corda. Ic. vi. t. 8, f. 84, t. 13, f. 108.*

In woods. Bristol. Apethorpe.

In general the internal substance changes from dirty white to pale reddish-brown, and then almost to black; sometimes, however, there is at first a slight tinge of pale tan. The spores are variable in form, but are never acuminate.—*M. J. B.* (*Fig. 107, spores.*)

1058. *Hymenogaster pallidus.* B. & Br. "Pallid Hymenogaster."

Smaller, rounded, depressed, nearly smooth, white, then dirty tan colour, rather soft, within white, then yellow, then pale brown; sterile base obsolete; spores lanceolate, acute, shortly pedicellate, rather tough.—*B. & Br. Ann. N.H. xviii. p. 74. Berk. Outl. p. 296.*

In a dry fir plantation. Cotterstock.

This species, which scarcely exceeds in size a horsebean, is nearly allied to *H. vulgaris*, but differs in its more acute spores as well as in colour. Spores .032-.038 mm. long, .013-.016 mm. broad (.0012 × .0004 in.).

1059. *Hymenogaster citrinus.* Vitt. "Lemon-coloured Hymenogaster."

Rounded, gibbous, shining as if silky, lemon-coloured or golden-yellow, then rufous-black, of the same colour within; substance firm; spores lanceolate, apiculate, rugulose, reddish-brown, opaque.—*B. & Br. Ann. N.H. no. 293. Berk. Outl. p. 296, t. 20, f. 2. Vitt. Tub. p. 21. Berk. exs. no. 284. Tul. Hyp. t. i. f. 1, t. 10, f. 3. Corda. Ic. vi. t. 9, f. 87.*

In woods. Audley End. Wiltshire.

The yellow veins, subfusiform, rough, dark-coloured spores, the frequently coloured sporophores, and the cheese-like scent which communicates itself to everything which is near, are the criterions of this species. When young it is of a greenish-yellow, but this soon wears off when rubbed, or exposed to the air. The sporophores occasionally become of a much darker colour than the neighbouring cells, and have a resinous appearance.—*B. & Br.*

1060. *Hymenogaster olivaceus.* Vitt. "Olive Hymenogaster."

Globose, but angular; peridium whitish, then tinged with yellow, rufous when bruised; substance white, then of a dull buff, then rufous-olive, variegated with the white trama; spores pedicellate, mucronate, generally smooth.—*B. & Br. Ann. N.H. no. 295. Berk. Outl. p. 296. Vitt. Tub. t. 5, f. 9. H. populetorum, Berk. exs. no. 304.*

In woods. West of England.

Variable in size, from that of a hazel-nut to a walnut. Peridium at first white, slightly tinged with lemon-colour; cells at first white, gradually becoming of a dull buff, and then of a reddish grey or brown. Smell like that of *Lactarius theiogalus*. Spores ovate, shortly pedicellate, with an abrupt, elongated, sometimes irregular apex; in general smooth and transparent, and containing 2-3 nuclei, but sometimes slightly rugose, though by no means opaque, as in *H. citrinus*, from which it may be known by its reddish substance, larger cells, more transparent, paler and smoother spores, which are frequently more abruptly acuminate.—*M. J. B.*

1061. *Hymenogaster tener.* Berk. "Thin Hymenogaster."

Small, globose, soft, white, silky; substance pale pink, then greyish-umber; sterile base conspicuous, white; spores broadly elliptic, with a papillary apex, minutely warty.—*Berk. Ann. N.H. no. 297. Berk. Outl. p. 296. H. lilacinus, Berk. exs. no. 305. Tul. Hyp. t. i. f. 4, t. 10, f. 1.*

In woods. Spring and summer. West of England.

About the size of a bean or large hazel-nut; globose, soft and tender, white and silky externally; peridium thin, at length dingy, at first white within, but soon acquiring a delicate pink tinge, which, as the spores ripen, changes to an umber grey. Absorbing base white, very distinct; cells looser than in *H. olivaceus*; spores much smaller than in the neighbouring species, broad, elliptic, with a minute papilla, never acuminate, minutely verrucose. Smell like that of *Lact. theiogalus*.—*M. J. B.* This is one of the most distinct species, characterised by its small, widely elliptic, or subglobose spores. Spores $\cdot 016\text{--}\cdot 019$ mm. long, $\cdot 0096\text{--}\cdot 0105$ mm. broad ($\cdot 0005\text{--}\cdot 0006 \times \cdot 00035\text{--}\cdot 0004$ in.).
(Fig. 107, fungus and section.)

1062. *Hymenogaster Thwaitesii.* B. & Br. "Thwaites's Hymenogaster."

Small, globose, firm, dirty white, here and there stained; substance brown; spores globose, rather rough, papillary.—*B. & Br. Ann. N.H. xviii. p. 75. Berk. Outl. p. 297. Tul. Hyp. t. 10, f. 11.*

In woods. Rare. Near Bristol.

The spores are far more globose than in any other species, and are either quite obtuse or minutely apiculate. The inner membrane of the spores often contracts, so as to present a very singular appearance. A few elongated spores are mixed with them, but the normal form is globose. They are larger than in *H. tener*, but smaller than in *H. decorus*.

1063. Hymenogaster pusillus. *B. & Br.* "Little Hymenogaster."

Very small, obovate or subdepressed, white; sterile base large; substance dirty white; cells large; spores pallid-rubiginous, short, broadly-elliptic, with a papillary apex, at length smooth. — *B. & Br. Ann. N. H.* xviii. p. 75, no. 5. *Tul. Hyp.* p. 73.

On mossy ground in woods. Rushton. Norths.

About 2 lines high, obovate or somewhat depressed, pure white, yellowish brown when dry, and then resembling strongly *Sclerotium complanatum*, nearly smooth; dirty white within, furnished with a large, distinct, absorbing base. Cavities of the hymenium large for the size of the fungus, clothed sparingly with the rust-coloured spores. Sporophores clavate, frequently forked or irregular, having two spores on rather long spicules. Spores short, minute, broadly elliptic, at first smooth, at length rather rough, obtusely apiculate. — *M. J. B.* Spores .013-.016 mm. long, .0096 mm. broad (.0004-.0005 × .00035 in.).



FAIRY-RING CHAMPIGNON.

Marasmius oreades.

Order VIII. PHALLOIDEI.

Volva universal, the intermediate stratum gelatinous. Hy-
menium deliquescent.—*Berk. Outl. p. 297.*

Pileus perforate, free *Phallus.*
Pileus imperforate, adnate *Cynophallus.*
Receptacle forming an ovate or globose network . . . *Clathrus.*

Gen. 63.

PHALLUS, Linn.



Fig. 108.

Pileus perforated at the apex, free all round,
reticulate. Veil none. (*Fig. 108.*)

1064. Phallus impudicus. Linn. "Common Stinkhorn."

Pileus conical, reticulated; margin of the reticulations nearly entire; stem white, naked.—*Berk. Outl. p. 297, t. 20, f. 3. Grev. t. 213. Harz. t. 65, 66. Mich. t. 83. Bail. t. 25. Fl. Dan. t. 175. Schæff. t. 196-198. Bull. t. 182. Bolt. t. 92. Nees. f. 259. Fckl. exs. no. 1270. Smith, P.M. f. 31. Pay. f. 551, 560. Corda. v. f. 50. Eng. Fl. v. p. 226. Bisch. f. 3330. Phallus fœtidus, Sow. t. 329.*

In woods, &c. Common. Very fœtid. [United States.]

Uterus about as large as a hen's egg, consisting of two coats distended with jelly, besides which there is another delicate membrane immediately surrounding the pileus. Stem rapidly elongated, when full grown 6-8 in. high, 1 in. thick, hollow at first, closed at the apex, at length pierced.—*Eng. Fl.*
(*Fig. 108, reduced.*)

1065. Phallus iosmos. Berk. "Toothed Phallus."

Pale reddish grey; pileus conical, reticulated, borders of the reticulations strongly toothed.—*Berk. Outl. p. 298. Curt. Brit. Ent. x. t. 469. Eng. Fl. v. p. 227.*

Sandhills. Lowestoft.

Scent something like violets at a distance, but very offensive when the plant is dried.—*Curt.*

Gen. 64.

CYNOPHALLUS, Fr.

Fig. 109.

Pileus adnate, imperforate, uneven. Veil none.—*Fr. S. M. ii. p. 284. Berk. Outl. p. 298.* (Fig. 109.)

This genus differs from *Phallus* in the adnate and imperforate pileus, as well as in some other points.

1066. Cynophallus caninus. Fr. "Common Cynophallus."

Pileus continuous with stem, ovate, tuberculose, impervious, reddish.—*Curt. t. 235. Schæff. t. 330. Fl. Dan. t. 1259. Sow. t. 330. Nees. f. 260. Eng. Fl. v. p. 227. Bisch. 3335.*

Amongst decayed leaves in woods. Local.

Uterus about the size of a hazel nut; stem hollow, very pale orange; pileus covered with green scentless mucus, beneath which it is red and wrinkled.—*Eng. Fl.* (Fig. 109, reduced.)

Gen. 65.

CLATHRUS, Mich.

Fig. 110.

Stem none. Receptacle forming an ovate or globose network; branches of the network cellular within.—*Fr. S. M. ii. p. 287. Berk. Outl. p. 298.*

(Fig. 110.)

1067. Clathrus cancellatus. Linn. "Latticed Stinkhorn."

Obovate, branches obliquely anastomosing, cancellate.—*Fr. S. M.* ii. p. 288. *Ann. N. H.* no. 304. *Huss.* i. t. 86. *Batt. t.* 2, f. E. *Pay. f.* 556-559. *Mich. t.* 93. *Nees. f.* 201. *Bull. t.* 441. *Tourn. t.* 329, f. B. var. *Cooke, B. F. t.* 20. *Corda. v. f.* 49. *Bisch. f.* 3638. *Bail. t.* 23. *Rabh. F. E.* no. 35.

In woods. Rare. Isle of Wight, Devonshire, Lyme Regis, South of Ireland, &c. [Georgia, U. S.]

Very beautiful, but extremely foetid. Branches resembling sealing-wax, covered here and there with an olive sporiferous mass.—*M. J. B.*
(*Fig. 110, reduced.*)

Order IX. TRICHOGASTRES.

Peridium single or double. Hymenium at length drying up into a dusty mass of threads and spores.—*Fr. S. M.* iii. p. 3. *Berk. Outl.* p. 298.

Stalked—

Receptacle pileiform; volva universal . . . *Batarrea.*

Receptacle subglobose, peridium thin, outer coat separating . . . *Tulostoma.*

Not stalked—

Peridium thin—

Persistent, bark shelling off; no sterile base . . . *Bovista.*

Vanishing above, bark becoming warty, with sterile base . . . *Lycoperdon.*

Peridium firm, central mass veined. Spores large, granulated. . . *Scleroderma.*

Peridium rigid, enclosing distinct cells filled with peridiola . . . *Polysaccum.*

Peridium carbonaceous, at length hollow . . *Cenococcum.*

Peridium double, outer one splitting in stellate lobes . . . *Geaster.*

Gen. 66

BATARREA, Pers.

Fig. 111.

Volva universal, central stratum gelatinous. Receptacle pileiform, bursting through the volva, seated at the top of a tall stem.—*Berk. Outl.* p. 299.

(Fig. 111.)

1068. Batarrea phalloides. P. "Scarce Batarrea."

Stem equal. Spores brownish.—*Fr. S.M.* iii. p. 7. *Woodw. Phil. Trans.* v. 74, p. 423, t. 26. *Ann. N.H.* no. 303. *Smith. Spic.* i. t. 12. *Sow. t.* 390. *Pers. Syn. t.* 3, f. 1. *Nees. f.* 257. *Eng. Fl.* v. p. 298. *Hook. Journ.* 1843. t. 22, f. 1. *Bisch. f.* 3463. *Corda. Anl. t. E. f.* 50, no. 4-6.

On sandhills, or hollows of old trees. Rare. New Brighton. Dropmore.

Whole plant more or less of a brown hue. Exterior volva ovate, fleshy, dirty-white, inclining to brown, buried 6-8 in. in the sand, with a few dirty-white floccose hairs at the base, middle volva much thinner, and almost membranaceous, connected with the outer by mucilage, smooth within; inner volva internally villous, covered with very abundant yellow-brown dust-like seed; externally concave and smooth. Stem formed within the cavity of the interior volva, cylindric, straight, short, fleshy, filled with mucilage, but afterwards elongated upwards with wonderful force and quickness, and protruded through the soil, carrying with it almost the whole inner volva, adnate with its apex, and covered, with a portion of the outer coat torn off, in the same manner. Immediately after maturity it becomes dry, as also the volva; tubular within, and externally fibrous, and remains a long time bleached and tossed about by wind and rain.—*Smith.* (Fig. 111, reduced.)

Gen. 67.

TULOSTOMA, Pers.

Fig. 112.

Peridium thin, papyraceous, the outer coat separating, distinct from the elongated stem.

—*Fr. S.M.* iii. p. 41. *Berk. Outl.* p. 299.

(*Fig.* 112.)

1069. Tulostoma mammosum. Fr. "Nippled Tulostoma."

Stem equal, subsquamose, mouth of peridium prominent, mammæform, entire.—*Fr. S.M.* iii. p. 42. *Ray. Syn.* p. 27. *Tourn. t.* 331, *f. E.F. Bull. t.* 294, 471, *f. 2.* *Sow. t.* 406. *Nees. f.* 130. *Fl. Dan. t.* 1740, *f. 1.* *Chev. t.* 10, *f. 1.* *Fckl. exs. no.* 1268. *Eng. Fl. v. p.* 305. *Pay. f.* 40, 42. *Bisch. f.* 3609, 3610. *Kl. exs. no.* 177.

On old walls, amongst moss. Local. [United States.]

It varies with a smooth and nearly solid stem, or subsquamose, with a central pith. A vertical section shows a groove round the top of the stem, and a cavity towards the top of the peridium, in consequence of the flocci being shorter above. Spores bright ferruginous.—*M. J. B.* (*Fig.* 112.)

Gen. 68.

GEASTER, Mich.

Fig. 113.

Peridium double, outer distinct, persistent, bursting, and dividing into several stellate lobes.—*Fr. S.M.* iii. p. 9. *Berk. Outl.* p. 299.

(*Fig.* 113.)

In one species the inner peridium is supported by several stems, and the orifices are numerous. This has led to its removal by some mycologists from this

to a new genus. We prefer to retain it as a sub-genus. In the rest the orifice and support is single. None of the species are common.

Sub.-Gen. 1. MYRIOSTOMA—Orifices and peduncles numerous.

1070. Geaster coliformis. *P.* "Cullender Star Puff-ball."

Outer peridium multifid, expanded, inner supported by many short, slender stems; apertures numerous, ciliated.—*Pers. Syn.* p. 131. *Fr. S.M.* iii. p. 12. *Ray. Syn.* iii. p. 27. *Dicks. t.* 3. f. 4. *Sow. t.* 313. *Eng. Fl.* v. p. 299.

On the ground. Local. Norfolk. Suffolk.

Remarkable for its numerous peduncles and orifices. The peduncles are compressed, somewhat branched, and appear to bear a definite relation to the number of orifices.—*M. J. B.*

Sub.-Gen. 2. GENUINA—Orifice and peduncle single.

1071. Geaster fornicatus. *Fr.* "Vaulting Geaster."

Outer peridium subquadrifid, separating into two coats, connected at the tips of the divisions, and vaulted; mouth conical, plicato-sulcate.—*Berk. Outl.* p. 299. *Fr. S.M.* iii. p. 12. *Phil. Trans.* xliii. t. 2, f. 11, 12. *Blackst. t.* 2. *Buxb.* v. t. 28, f. 1, 2. *Batt. t.* 39, f. 1-4. *Bryant. f.* 15. *Sow. t.* 198. *Schæff. t.* 183. *Batsch. f.* 168. *Schnid. t.* 37. *Nees. f.* 128. *Eng. Fl.* v. p. 300. *Fckl. exs. no.* 1267. *Bisch. f.* 3635. *Kl. exs. ii. no.* 140.

On the ground and in hollow trees. [United States.]

The outer coat of the volva remains so firmly attached to the ground during the expansion of the plant that the inner separates, and is inverted and fixed by the tips of its stellate lobes, to those of the outer coat.—*Eng. Fl.*

1072. Geaster striatus. *D.C.* "Striate Geaster."

Outer peridium multifid, simple, expanded; interior subpedicellate; mouth prominent, conical, sulcate-striate.—*Fr. S.M.* iii. p. 13. *Mich. t.* 100, f. 3. *Gled. t.* 6, f. upper. *Eng. Fl.* v. p. 300. *Kl. exs. no.* 173. *Fckl. exs. no.* 1264.

Amongst sand. Great Yarmouth. [Cincinnati, U. S.]

This species differs from *G. limbatus* in the nature of the orifice, and from *G. Bryantii* in the want of the channel round the top of the stem.—*Eng. Fl.*

1073. Geaster Bryantii. *Berk.* "Bryant's Geaster."

Outer peridium coriaceous, expanded, multifid; inner pedicellate, with a groove round the top of the peduncle; mouth sulcato-plicate.—*Berk. Outl.* p. 300. *Eng. Fl.* v. p. 300. *Bryant. f.* 19. *Schm. Ic. t.* 37, f. 11-12. *Berk. exs. no.* 198.

Under yew trees, and on exposed fen banks.

Distinguished by the groove round the top of the peduncle and by the elongated plicate mouth.

1074. Geaster limbatus. *Fr.* "Bordered Geaster."

Outer peridium coriaceous, expanded, multifid; interior pedicellate; mouth fimbriato-pilose, depressed, rather acute.—*Fr. S.M. iii. p. 15. Sow. t. 312. Huss. i. t. 2. Ray. Syn. t. i. f. i. Buxb. v. t. 29, f. 1. Bryant. f. 12, 13, 14, 16, 17. Schmid. t. 46. Eng. Fl. v. p. 301. Bisch. f. 3636, 3637. Fckl. exs. no. 1599.*

On the ground.

[Up. Carolina.]

The inner peridium is slightly constricted, and then swollen at the base, without any groove round the top of the peduncle, into which it passes gradually.—*Eng. Fl.*

1075. Geaster fimbriatus. *Fr.* "Fringed Geaster."

Outer peridium multifid, expanded, flaccid; interior sessile; mouth indeterminate, piloso-fimbriate.—*Fr. S.M. iii. p. 16. Mich. t. 100, f. 1. Berk. Outl. t. 20, f. 4. Sow. t. 80. Ann. N.H. no. 378. Schmid. t. 43-53, f. 1-3. Berk. exs. no. 275, 209. Rabh. F.E. no. 165. Cooke. exs. no. 213. Fckl. exs. no. 1266.*

In fir plantations.

[Low. Carolina.]

The mouth is fimbriate, and not simply toothed as in *G. rufescens*.

1076. Geaster mammosus. *Chev.* "Nippled Geaster."

Outer peridium multipartite, rigid, hygrometric; laciniae equal; interior sessile; mouth ciliate, acutely conic in a circular disc.—*Fr. S.M. iii. p. 17. Sow. t. 401. Mich. t. 100, f. 3. Bull. t. 238, f. f, g, h? Eng. Fl. v. p. 301. Ann. N.H. no. 379.*

On the ground. Rare.

This species is extremely rare. The Rev. M. J. Berkeley writes—"I have seen only the specimen figured by Sowerby."

1077. Geaster rufescens. *Fr.* "Reddish Geaster."

Outer peridium multifid, at length revolute; interior sessile, naked; mouth dentate.—*Fr. S.M. iii. p. 18. Bocc. t. 305, f. 4. Buxb. ii. t. 49, f. 3. Schæff. t. 182. Bull. t. 471, f. 1. Pay. f. 469. Fl. Dan. t. 1433. Ann. N.H. no. 378.*

In pastures. Leicestershire. Northamptonshire.

[Carolina, U. S.]

The mouth appears to be irregularly toothed according to the "Outlines."

1078. Geaster hygrometricus. P. "Hard-coated Geaster."

Outer peridium multipartite, thick, rigidly inflexed when dry; inner sessile, sub-reticulate, bursting irregularly.—*Fr. S. M.* iii. p. 19. *Mich. t.* 100, f. 4-6. *Gled. t.* 6. *Bull. t.* 138 (partly), f. a-d. *Schmid. t.* 27, 28. *Sow. t.* 401. *Nees. f.* 127. *Bolt. t.* 179. *Kl. exs. no.* 341. *Eng. Fl. v. p.* 302. *Bisch. f.* 3632. *Fckl. exs. no.* 1263.

On the ground. Rare. Near Halifax. [United States.]

Variable in size, colour, and the surface of the inner peridium, which is sometimes reticulated, sometimes nearly smooth.—*Eng. Fl.* The hard, horny, outer peridium, and scurfy or reticulate, irregularly bursting, inner peridium, readily distinguish this species.—*M. J. B.*

1079. Geaster lageniformis. Vitt. "Flask-like Geaster."

Outer peridium splitting to the middle, in nearly equal acuminate laciniae, inner stratum very thick, evanescent. Inner peridium sessile, flaccid, mouth determinate, plano-conic, ciliato-fimbriate, columella rather long, clavate.—*Vitt. Monog. Lycop. t.* 1, f. 2. *Payer. f.* 519, 520.

On the ground.

Specimens were exhibited at one of the meetings of the Horticultural Society of London. (*Fig. 113, reduced.*)

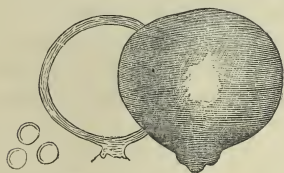
Gen. 69.**BOVISTA, Dill.**

Fig. 114.

Peridium papyraceous (or sometimes corky), persistent; bark distinct, continuous, at length shelling off. Capillitium sub-compact, equal, adnate to the peridium on all sides; spores pedicellate.—*Fr. S. M.* iii. p. 21. *Berk. Outl. p.* 301. (*Fig. 114.*)

1080. Bovista nigrescens. P. "Blackish Bovista."

Subglobose, peridium papyraceous, tough, at length blackish-umber; bark even, entirely evanescent; capillitium dense, purple brown, as well as the spores.—*Fr. S. M.* iii. p. 23. *Berk. Outl. t.* 20, f. 5. *Bocc. t.* 306, f. 2. *Bolt. t.* 118. *Batsch. f.* 116. *Sow. t.* 331. *Eng. Fl. v. p.* 302. *Fckl. exs. no.* 1884. *Kl. exs. no.* 1410.

In pastures. Common.

[United States.]

About $1\frac{1}{2}$ in. broad.

1081. Bovista plumbea. P. "Lead-coloured Bovista."

Globose, peridium papyraceous, flexible, lead-coloured, bark subpersistent at the base, mouth narrow, capillitium and spores brown.—*Fr. S.M.* ii. p. 24. *Mich. t.* 97. f. 6. *Berk. Outl. t.* 20. f. 6. *Bull. t.* 192. *Eng. Fl.* v. p. 302. *Pay. f.* 20. *Corda. Ic.* v. f. 47. *Corda. Anl. t. C. f.* 36, no. 3-6. *Fckl. exs.* no. 1262.

In pastures. Common.

[United States.]

Generally smaller than *B. nigrescens*.

(Fig. 114.)

1082. Bovista ammophila. Lev. "Rooting Bovista."

Globoso-turbinate, tomentose, verruculose, white; mycelium cord-like, rooting. Spores globose, even, olivaceous, as well as the delicate capillitium.—*Lev. Ann. Sc. Nat. ser.* 3, ix. p. 129, t. 9, f. 5. *B. & Br. Ann. N.H.* no. 1033.

On the side of a wood. Sept. Denbighshire.

Easily recognised by the long cord-like root, and olivaceous spores.

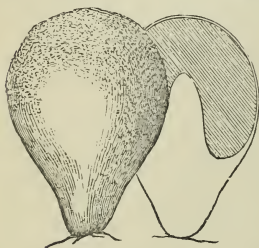
Gen. 70.**LYCOPERDON, Tourn.**

Fig. 115.

Peridium membranaceous, vanishing above, or becoming flaccid; bark adnate, subpersistent; breaking up into scales or warts. Capillitium soft, dense, adnate to the peridium, and sterile base.—*Fr. S.M.* iii. p. 27. *Berk. Outl.* p. 301. (Fig. 115.)

1083. Lycoperdon giganteum. Batsch. "Giant Puff-Ball."

Peridium very fragile above, and obtuse, cracking into areæ, evanescent, very widely open, bark floccose, rather distinct; capillitium vanishing, together with the dingy-olive spores.—*Fr. S.M.* iii. p. 29. *Grev. t.* 336. *Huss. i. t.* 26. *Ray. Syn.* no. 4, p. 26. *Schæff. t.* 191. *Bull. t.* 447. *Sv. Bot. t.* 294. *Batsch. f.* 165. *Fl. Dan. t.* 1920. *Sow. t.* 332, upper fig. *Nees. f.* 124, C. *Eng. Fl.* v. p. 303. *Smith, E.M. f.* 25. *Corda. Ic.* v. f. 40.

In pastures. Local. Esculent when young. [United States.]

Attaining a very large size; peridium soft and smooth, like kid-leather when young, when old dingy olive. Employed as an anæsthetic.

1084. *Lycoperdon cælatum*. Fr. "Collapsing Puff Ball."

Peridium flaccid above, collapsing, obtuse, dehiscent at the apex, at length open, cup-shaped; sterile stratum cellulose; inner peridium distinct all round; capillitium nearly free, collapsing; spores dingy-yellow.—*Fr. S.M.* iii. p. 32. *Ray. Syn.* iii. p. 26, no. 3. *Vaill. t.* 16, f. 4. *Schæff. t.* 189, 190, 186. *Nees. f.* 125. *Berk. Outl. t.* 20, f. 7. *Huss. ii. t.* 23. *Eng. Fl.* v. p. 303. *Harz. t.* 74. *Bisch. f.* 3604.

In pastures. Common. [Carolina. Maine, U. S.]

Remarkable for its spongy, blunt, obconic base, cavity above sublenticular. In consequence of the simple orifice the mass of flocci and spores does not fall out but collapses, until by decay the upper part of the fungus is ruptured.—*Eng. Fl.*

1085. *Lycoperdon atropurpureum*. Vitt. "Purple-spored Puff Ball."

Peridium flaccid, dingy-rufous, opening by a minute obtuse mouth; bark at first rough with minute spines; sterile base cellular, continuous with the capillitium; spores largish, pedicellate, brown-purple, echinulate.—*Vitt. Lyc. t.* 2, f. 6. *Berk. Outl. p.* 302. *Sci. Gos.* 1866, f. 252.

On downs. West of England.

Spores echinulate in this species, and in *L. saccatum*.

1086. *Lycoperdon pusillum*. Fr. "Little Puff Ball."

Peridium entirely flaccid, persistent, obtuse; mouth always narrowly dehiscent; bark even, then rimose with adpressed scales; sterile stratum obsolete, continuous with the capillitium; spores olive.—*Fr. S.M.* iii. p. 33. *Bolt. t.* 117, f. C. *Mich. t.* 97, f. 3. *Schæff. t.* 294. *Batsch. f.* 228, var. *Bull. t.* 435, f. 2. *Eng. Fl.* v. p. 304. *Sci. Gos.* 1866, f. 255. *Kl. exs. no.* 1635. *Fckl. exs. no.* 1261.

In pastures. [Low. & Mid. Carolina.]

A small species, sometimes not larger than a marble.

1087. *Lycoperdon saccatum*. Vahl. "Elongated Puff Ball."

Peridium lens-shaped or rounded, scurfy, obtuse, cracking into areæ, fugacious, very thin, as well as the adnate bark; capillitium compact, persistent; spores dingy-umber.—*Fr. S.M.* iii. p. 35. *Huss. i. t.* 14. *Bocc. t.* 306, f. 1. *Bisch. f.* 3605. *Fl. Dan. t.* 1139. *Sci. Gos.* 1866, f. 251. *Ann. N.H. no.* 210. *Cooke exs. no.* 214.

In thickets or their borders.

Easily known by the plicate folds on the under side of the peridium. Spores echinulate.

1088. *Lycoperdon gemmatum*. Fr. "Warted Puff Ball."

Peridium membranaceous, persistent, base narrow, opening with an umbonate mouth; bark farinaceous, adnate, covered with sub-spinulose warts; flocci in the centre forming a columella, persistent; spores yellow with a greenish tinge.—*Fr. S.M.* iii. p. 36. *Bolt. t.* 117. *Huss. i. t.* 54. *Vaill. t.* 12, f. 15, 16. *Mich. t.* 97, f. 1. *Batt. t.* 31, f. 4. *Fl. Dan. t.* 1120. *Bull. t.* 475, B-E. *Harz. t.* 27. *Chev. t.* 10, f. 2. *Schæff. t.* 184. *Eng. Fl. v.* p. 304. *Sci. Goss.* 1866, f. 253. *Bisch. f.* 3614.

In meadows, &c. Common. [Cincinnati. Maine, U. S.]

Very variable. Mouth prominent, umbonate from the club-shaped columella; spores small and smooth.

1089. *Lycoperdon pyriforme*. Schæff. "Pear-shaped Puff Ball."

Peridium membranaceous, persistent, subpyriform, opening with an umbonate mouth; bark innate, covered with very thin fugacious squamules, columella conical; spores greenish-yellow.—*Fr. S.M.* iii. p. 39. *Ray. Syn.* iii. p. 19, no. 7. *Huss. i. t.* 70. *Grev. t.* 304. *Schæff. t.* 189. *Bull. t.* 32, & t. 435, f. 3. *Fl. Dan. t.* 1680, f. 1. *Eng. Fl. v.* p. 304. *Sci. Goss.* 1866, f. 254. *Cooke, exs. no.* 215. *Fckl. exs. no.* 1260.

On decayed stumps. Common. [United States.]

Generally much tufted. Root white, branched, creeping; columella conical; spores small and smooth. (Fig. 115.)

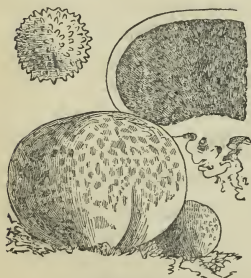
Gen. 71.**SCLERODERMA, P.**

Fig. 116.

Peridium firm, with an innate bark, bursting irregularly; flocci adhering on all sides to the peridium, and forming distinct veins in the central mass; spores large, granulated.—*Berk. Outl.* p. 303. *Eng. Fl. v.* p. 305.

(Fig. 116.)

1090. *Scleroderma vulgare*. Fr. "Common Scleroderma."

Subsessile, irregular; peridium corky, hard, dehiscing indefinitely; inner mass bluish-black; spores dingy.—*Fr. S.M.* iii. p.

46. *Huss. i. t. 17. Fl. Dan. t. 1969, f. 2. Vaill. t. 16. f. 8. Bolt. t. 116. Bull. t. 270. Sow. t. 268. Eng. Fl. v. p. 305. Berk. Outl. t. 15, f. 4. Pay. f. 506. Schnz. t. 14, f. 46-48. Tuber solidum, With. iii. p. 459. Fckl. exs. no. 1253.*

On borders of woods. Common. [Maine, U. S.]

The larger form is generally of a yellowish hue, with the surface warty, or covered with squarrose scales, the smaller quite sessile, minutely warty, and of a bright brown. The spores are collected into little heaps separated by a few greyish flocci.—*Eng. Fl.* (Fig. 116.)

1091. *Scleroderma bovista.* Fr. “Thin-coated *Scleroderma.*”

Subsessile, irregular; peridium thin, soft, dehiscing irregularly; bark sub-seceding; flocci yellow; spores dingy olive.—*Fr. S.M. iii. p. 48. Mich. t. 99, f. 2. Batsch. f. 229. Eng. Fl. v. p. 306.*

On sandy ground. [Low. Carolina.]

Known by its thinner peridium, and yellow flocci.—*M. J. B.*

1092. *Scleroderma verrucosum.* Pers. “Warty *Scleroderma.*”

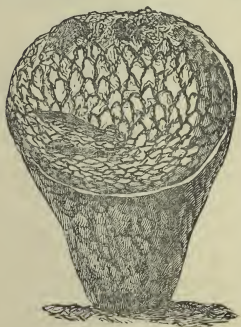
Substipitate; peridium rounded, subverrucose, thin above and fragile; inner mass purplish-black; flocci and spores brown.—*Fr. S.M. iii. p. 49. Grev. t. 48. Huss. i. t. 17. Bocc. t. 305, f. 2. Schæff. t. 188. Vaill. t. 16, f. 7. Mich. t. 99, f. 3. Bull. t. 24. Sow. t. 311. Nees. f. 123. Eng. Fl. v. p. 306. Fckl. exs. no. 1254.*

On sandy ground. [United States.]

Stem thick, lacunose. Care must be taken not to confound this with stipitate forms of the foregoing.—*M. J. B.*

Gen. 72.

POLYSACCUM, D.C.



Common peridium simple, rigid, bursting irregularly; internal mass divided into distinct cells, filled with peridiola; spores mixed with the threads.—*Berk. Outl. p. 304. Eng. Fl. v. p. 306.* (Fig. 117.)

Fig. 117.

1093. Polysaccum olivaceum. Fr. "Olive Polysaccum."

Peridium roundish, olive, as well as the regular, minute peridioli; stem short, abrupt, almost rootless.—*Fr. S.M.* iii. p. 54. *Sow. t.* 425, *a. b.* *Berk. Outl.* p. 304.

On the ground. Very rare.

It is so extremely rare that neither the Rev. M. J. Berkeley nor ourselves have seen a single specimen. An allied species is found in Lower Carolina, U. S. (*Fig.* 117.)

Gen. 73.**CENOCOCCUM, Fr.**

Fig. 118.

Peridium naked, thick, carbonaceous, indehiscent, at length hollow, with the walls dotted with dust-like spores.—*Berk. Outl.* p. 304. *Eng. Fl.* v. p. 307. (*Fig.* 118.)

1094. Cenococcum geophilum. Fr. "Ground Cenococcum."

Black, even, within of the same colour, or dark brown; spores subspherical, blackish, even (or sometimes reticulated?).—*Fr. S.M.* iii. p. 228. *Tul. Hyp. t.* 21, *f.* 8. *Lycoperdon graniforme*, *Sow. t.* 270. *Desm. exs. no.* 1021. *Bisch. f.* 3685. *Act. Turin.* 1843, v. t. 3, *f.* 5. *Fckl. exs. no.* 1072.

In woods where the soil is peaty. Common.

About the size of a vetch. Scattered upon the ground without any root. (*Fig.* 118.)



Order X. MYXOGASTRES.

At first pulpy, at length filled with flocci and dust-like spores.
—*Berk. Outl. p. 304.*

Whole plant at first gelatinous. Mycelium often vein like, forming reticulated or anastomosing strata, but sometimes diffuse, giving rise to sessile or stipitate, free or confluent pendia, consisting of one or more membranes, inclosing, when mature, a dry mass of threads or plates, and spores; at length often bursting. Threads of various structure, sometimes containing one or more spirals.—*Berk. Introd. p. 335.*

Large, sessile, more or less indeterminate.

Peridium double, externally warty or mealy. . . . *Lycogala.*

Peridium single.

Externally naked, fugitive *Reticularia.*

Externally floccose *Æthidium.*

Peridium crustaceous.

Spores surrounded by membranous folds . . . *Spumaria.*

Peridium thick, fleshy *Ptychogaster.*

Small, sometimes stalked, determinate.

Threads not a prominent feature.

Spores free.

Peridium double, external smooth . . . *Diderma.*

Peridium simple.

Bursting irregularly.

Scaly or floccose *Didymium.*

Naked, smooth *Physarum.*

Bursting longitudinally *Angioridium.*

Spores in groups.

Peridium naked, or mealy *Badhamia.*

Threads congested.

Peridium cup shaped, operculate . . . *Craterium.*

Threads prominent, at length more or less exposed.

Peridium delicate, evanescent.

Threads springing from columella . . . *Diachæa.*

Threads springing from stem . . . *Stemonitis.*

Threads dependent from disc . . . *Enerthenema.*

Peridium veined from innate capillitium . . *Dictydium.*

Peridium persistent below.

Capillitium netted, free above . . . *Cribraria.*

Capillitium elastic, banded or nodulose . . *Arcyria.*

Peridium bursting irregularly.

Threads free, spiral *Trichia.*

Peridium bursting longitudinally.

Threads of two kinds *Ophiotheca.*

Peridium splitting horizontally.

Threads few *Perichæna.*

Threads obsolete.

Peridium membranaceous.

Bursting irregularly *Licea.*

Splitting horizontally *Phelonitis.*

Gen. 74.

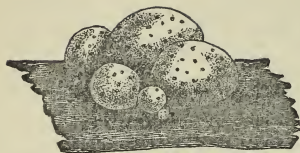
LYCOGALA, Mich.

Fig 119.

Peridium composed of a double membrane, papyraceous, persistent, bursting irregularly at the apex, externally warty, or furfuraceous. Flocci delicate, adnate to the peridium.—*Berk. Outl. p. 305. Eng. Fl. v. p. 307. (Fig. 119.)*

1095. Lycogala epidendrum. Fr. "Stump Lycogala."

Sub-globose, blood-red then brownish, punctato-scabrous, mouth irregular, spores becoming pale.—*Fr. S.M. iii. p. 80. Fl. Dan. t. 720, t. 2086, f. 2. Bolt. t. 119, f. 1. Fckl. exs. no. 1475. Bull. t. 503. Sow. t. 52. Holms. ii. t. 31. Buxb. v. t. 29, f. 2. Mich. t. 95. Jacq. Misc. t. 7. Schæff. t. 193. Nees. f. 97, 96. Grev. t. 38. Moug. exs. no. 85. Eng. Fl. v. p. 307. Corda. Ic. v. f. 40. Bisch. f. 3673. Kl. exs. no. 933.*

On rotten stumps. Common. [Cincinnati, U. S.]

Varying much in colour and size, and the hue of the sporidia. The surface is rough with dot-like scurfy warts, and changes colour sooner than the pulpy mass within, which is often of the finest scarlet, and oozes out in large drops if the peridium is injured.—*Eng Fl. (Fig. 119.)*

1096. Lycogala parietinum. Fr. "Paper Lycogala."

Hemispherical, punctate, bluish-black, lacero-dehiscent; spores yellow.—*Fr. S.M. iii. p. 83. Schrad. t. 6, f. 1. Pers. Ic. Pict. t. 3, f. 4-5. B. & Br. Ann. N.H. no. 381.*

On damp paper, basket work, &c. King's Cliffe.

Gen. 75.

RETICULARIA, Bull.

Fig. 120.

Peridium indeterminate, simple, thin, naked, bursting irregularly, fugitive. Flocci attached to the peridium, flat, branched, subreticulate.—*Berk. Outl. p. 305. Eng. Fl. v. p. 308. (Fig. 120.)*

1097. *Reticularia maxima.* Fr. "Large Reticularia."

Hypothallus effused, peridium very thin, tuberculose, white, then blackish-purple, flocci fasciculate, adnate to the base, spores black-purple.—*Fr. S.M.* iii. p. 85. *Eng. Fl.* v. p. 308. *Corda. Ic.* vi. f. 35. *Fckl. exs.* no. 1473.

On trunks of felled trees.

[United States.]

1098. *Reticularia applanata.* B. & Br. "Flattened Reticularia."

Effused, delicate, olivaceous-brown, spores olive, echinulate.—*B. & Br. Ann. N.H.* (1866), no. 1142, t. 2, f. 3.

On fallen trunk, the surface of which had been charred. Nov. Ascot.

Resembling in habit *Licea applanata*. Surface reticulated, as in *R. maxima*. Spores 4-7 in. a fascicle, connate, echinulate, .0005 in. diameter.—*B. & Br.*

1099. *Reticularia atra.* Fr. "Black Reticularia."

Sub-pulvinate, peridium very thin, subreticulate, flocci erect from the base, dendroid, divaricate, black, as well as the mature spores.—*Fr. S.M.* iii. p. 86. *Eng. Fl.* v. p. 308. *Kl. exs.* no. 1748. *A. & S. t.* 3, f. 3. *Lycop. fuliginosum*, *Sow. t.* 257.

On wood and bark of felled pines.

[Mid. Carolina.]

1100. *Reticularia umbrina.* Fr. "Umber Reticularia."

Subpulvinate, peridium very thin, nearly even, silvery, then umber, flocci adnate to the base, erect, branched, umber as well as the spores.—*Fr. S.M.* iii. p. 87. *Fl. Dan. t.* 1976, f. 2. *Eng. Fl.* v. p. 308. *Mich. t.* 95, f. 1. *Gled. t.* 6. *Bolt. t.* 133, f. 2. *Bull. t.* 446, f. 4, t. 476, f. 1-3. *Sow. t.* 272. *Grev. t.* 106. *Sturm. t.* 38. *Nees. f.* 95. *Berk. Outl. t.* 20, f. 8.

On stumps, &c.

[Mid. Carolina.]

When growing on a horizontal surface sometimes several inches broad; peridium before bursting of a beautiful silvery umber, passing beneath the mass of spores, and in favourable circumstances entirely separable from the matrix. From the base spring the compressed, branched, reticulated flocci, which are umber, like the spores, but shine with a golden or bronze-like lustre.—*Eng. Fl.* (Fig. 120.)

Gen. 76.

ÆTHALIUM, Link.

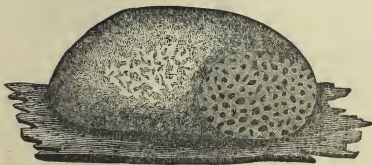


Fig. 121.

Peridium indeterminate, externally covered by a floccose evanescent bark, cellular within from the confluent interwoven flocci.—*Berk. Outl. p.* 306. *Eng. Fl.* v. p. 309. (Fig. 121.)

1101. Æthaliium septicum. Fr. "Wood Æthaliium"

Variously coloured, effused, external bark yellow, thin, deciduous; internal mass compact, black.—*Eng. Fl. v. p. 309. Fuligo violacea, Pers. Ic. Pict. t. i., p. 1. Pers. Syn. p. 161. Bisch. f. 3631. Schuzl. t. 15, f. 57-58. Kl. exs. no. 1027.*

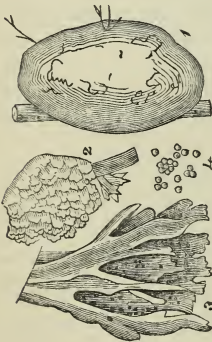
In woods, on various substances. [United States.]
(Fig. 121.)

1102. Æthaliium vaporarium. Fr. "Stove Æthaliium."

Yellow, effused, in irregular masses; spores at length black.—*Pers. Syn. p. 161. Nees. t. 8, f. 92. Schæff. t. 192. Jacq. Misc. v. t. 8. Mich. t. 96, f. 2. Rabh. F.E. no. 81. Fckl. exs. no. 1472. Bolt. t. 134. Bull. t. 380, f. 1, t. 424. Sow. t. 399, f. 1. Grev. t. 272. Gard. Chron. (1860), p. 409, with fig. Eng. Fl. v. p. 309 (partly).*

In stoves, on bark. [United States.]

This species is always yellow, and is a great nuisance in hot-houses. The two species have long been confounded together, but Fries and Mr. Berkeley appear to be of opinion now that they are distinct, although the specific distinctions have not been well defined.

Gen. 77.**SPUMARIA, Fr.**

Peridium indeterminate, simple, crustaceous, flocculoso-cellular. Spores surrounded by membranaceous, ascending, often sinuous folds.—*Berk. Outl. p. 306. Eng. Fl. v. p. 309.*

(Fig. 122.)

Fig. 122.

1103. Spumaria alba. D.C. "White Spumaria."

Effused, whitish, the internal plicate membrane branched in a horn-like manner.—*Fr. S.M. iii. p. 95. Bot. Zeit. 1848, t. 5, f. 1-6. Fckl. exs. no. 1471. Batt. t. 40, f. G.H. Bull. t. 326. Nees. f. 94. Grev. t. 267. Fl. Dan. t. 1978, f. 1. Eng. Fl. v. p. 310. Sow. t. 280. Bisch. f. 3630.*

On living grass, &c.

In its young state having the appearance of a white froth, variable in size. At this period it is quite soft and pulpy, but in a few days it becomes of a firmer texture, the surface begins to scale off, to burst in the centre, and to emit a vast number of dark-coloured globose spores. When the spores have escaped, they are found to have been contained in numerous branched, horn-like, nearly erect, membranaceous folds, resembling irregular, imperfect, divided tubes.—*Grev.* (Fig. 122.)

Gen. 78.

PTYCHOGASTER, Ca.

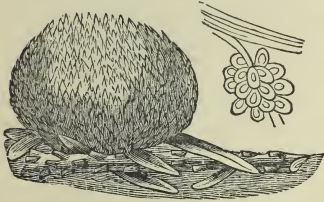


Fig. 123.

Peridium thick, fleshy, sub-stipitate, lamelloso-cellulose within, strata irregular fertile and sterile mixed, cells composed of conglutinated flocci, which are simple and flexuous. Spores simple, acrogenous.—*Corda Ic. ii. p. 24.* (Fig. 123.)

1104. Ptychogaster albus. Corda. "White Ptychogaster."

Peridium rounded, soft, white, peduncle spurious, cells flexuous, unequal; spores ochrey-clay colour, very minute, ovoid, pellucid, mixed with the continuous flocci.—*B. & Br. Ann. N.H.* (1865), no. 1038. *Corda. Icon. ii., f. 90.* *Corda. Anl. t. C. f. 34,* no. 7-10.

On the ground, at the roots of firs. Aboyne, &c.

The affinities of this curious plant are doubtful, for it does not appear to be of the creamy consistence of *Æthidium* in any stage of growth. We have no better opinion, however, to give than that of Corda. Fries seems to think that it is a degeneration of *Polyporus destructor*.—*B. & Br.* (Fig. 123.)

Gen. 79.

DIDERMA, P.

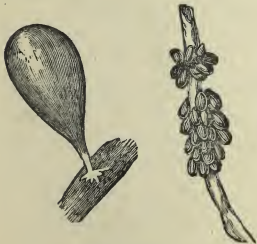


Fig. 124.

Peridium double, external distinct, crustaceous, smooth; internal delicate, evanescent, attached to the straggling flocci, with or without a columella.—*Berk. Outl. p. 306.* *Eng. Fl. v. p. 310.* (Fig. 124.)

A. Stipitate—stem distinct.**1105. Diderma floriforme. P.** "Flower-like Diderma."

Yellowish or whitish ; stem slender, peridium spherical, splitting in a stellate manner, reflexed ; columella ob-conical ; spores black-brown.—*Pers. Syn. p.* 164. *Fr. S.M. iii. p.* 99. *Bull t.* 371. *Eng. Fl. v. p.* 310.

On decaying trunks, &c. Autumn. [Mid. Carolina.]

Stems springing from a common thickish membrane.

1106. Diderma umbilicatum. P. "Umbilicated Diderma."

Whitish, stem obese, peridium sub-rotund, umbilicate beneath, split into laciniae, at length patent ; columella rufescent ; spores purplish-black.—*Fr. S.M. iii. p.* 99. *Fl. Dan. t.* 1972, *f.* 1. *Eng. Fl. v. p.* 310.

On bark of trees, &c. Appin.

The columella is very large, white within, resembling strongly the nucleus of *Nematelia*.—*Eng. Fl.*

1107. Diderma citrinum. Fr. "Lemon Yellow Diderma."

Lemon-yellow ; stem firm, even ; peridium hemispherical, squamulose, dehiscent ; columella spurious ; spores black-brown.—*Fr. S.M. iii. p.* 100. *Fl. Dan. t.* 1312, *f.* 1. *Eng. Fl. v. p.* 310.

On leaves of *Sphagnum*. Aug.—Oct. Inverary.

Scattered, each plant adhering by a separate membranaceous base ; stem shortish, thickest below, when dry tawny-yellow. Peridium brownish, splitting irregularly in a stellate manner, covered under a lens with minute roundish white scattered scales.—*Eng. Fl.*

B. Stipitate.—stem spurious, somewhat confluent.**1108. Diderma vernicosum. P.** "Varnished Diderma."

Peridia obovate, external thick, bay-brown, shining ; internal yellow ; stem thread-like, short, lax ; spores blackish.—*Fr. S.M. iii. p.* 102. *Dicks. i. t. 3. f.* 6. *Sow. t.* 136. *Pers. Obs. i. t. 3, f.* 7. *Fl. Dan. t.* 1312, *f.* 2. *Nees. f.* 110. *Grev. t.* 111. *Eng. Fl. v. p.* 311. *Kl. exs. no.* 175.

On grass, twigs, moss, &c. [Carolina, Maine, U.S.]

(Fig. 124, cluster nat. size, peridium magnified.)

1109. *Diderma spumarioides*. Fr. "Effused *Diderma*."

Effused, crustaceous, cohering; peridia subrotund, or irregular; exterior white; interior ash-colour, often confluent in a cellulose crust, columella spurious, white, as well as the flocci; spores black.—*Fr. S.M.* iii. p. 104. *Mich. t.* 96, f. 2. *Bull. t.* 424, f. 2. *Sow. t.* 280. *Fl. Dan. t.* 1978, f. 2. *Eng. Fl.* v. p. 311.

On leaves, moss, &c.

The specimen before me has obovate-oblong, distinct peridia, stems arising from the hypothallus, a cylindrical central white columella, and flocci of the same colour, mixed with the spores. The stem is entirely formed from the hypothallus and hyaline.—*M. J. B.*

C. *Sessile*.**1110. *Diderma lucidum*. B. & Br.** "Bright *Diderma*."

Subglobose, sessile, splitting in a somewhat stellate manner, bright reddish yellow, internally yellow, mass of fruit globose, black; flocci brown, triangular at the points of ramification, and yellowish; spores globose, black, very minutely echinulate.—*B. & Br. Ann. N.H.* no. 938, t. 15, f. 9.

On *Jungermannia* and moss.

Scattered or crowded, peridium subglobose, splitting in an irregular stellate manner. Spores ($\cdot 0005$ in.) $\cdot 0125$ m.m. diameter. Smaller than *D. vernicosum*, in which the spores are inclined to be angular, and much paler under the microscope.

1111. *Diderma Trevelyanii*. Fr. "Trevelyan's *Diderma*."

Sessile, ovate or globose; outer peridium splitting into many regular, linear, subreflexed, laciniae; inner obsolete; columella minute; spores black. *Fr. S.M.* iii. p. 105. *Grev. t.* 132. *Eng. Fl.* v. p. 311.

On *Bryum ligulatum*.

In specimens communicated to Sowerby by Mr. Trevelyan there is a very short, but distinct cylindrical stem, the peridium at first appears under the lens like a coriander seed, pale-brown, with pallid striæ, which indicate the points at which it will split, and perfectly smooth. Within this is a distinct white inner peridium, lining it very closely, and probably in general breaking off with it. Flocci greyish. I can find no trace of a columella.—*M. J. B.*

1112. *Diderma Carmichaelianum*. Berk. "Carmichael's *Diderma*."

Perfectly sessile, outer peridium brick-red, splitting into many revolute rays, inner white, intimately connected with the outer; columella large, spores black-brown.—*Eng. Fl.* v. p. 34.

On moss. Appin.

The columella resembles that of *D. umbilicatum*.

1113. Diderma nitens. *Klotsch.* "Shining Diderma."

Applanato-sessile, round, hemispherical, cæspitose, outer peridium crust-like, silvery white, brittle, inner very thin hyaline, columella none, spores black-brown.—*Klotsch. in Hook. Herb. Eng. Fl.* v. p. 312.

On bark. Appin.

1114. Diderma globosum. *Fr.* "Globose Diderma."

Sessile, globoso-hemispherical; outer peridium white, inner cinereous, columella globose, spores sooty-black.—*Fr. S.M.* iii. p. 106. *Mich. t.* 96, f. 6. *Bull. t.* 446, f. 2. *Pers. Disp. t.* 4, f. 4, 5. *Sturm. t.* 6. *Grev. t.* 122. *Chev. t.* 9, f. 28. *Eng. Fl.* v. p. 312. *Bisch. f.* 3629.

On dead leaves. Autumn. Common. [United States.]

Gregarious, sessile, minute, about a line in diameter, roundish, somewhat depressed, white, or greyish, the outer peridium fragile and evanescent in farinaceous particles; the inner one also fragile, grey, membranaceous. Columella large, white, roundish. Spores globose dark coloured, intermixed with filaments.—*Grev.*

1115. Diderma cyanescens. *Fr.* "Amorphous Diderma."

Sessile-adnate, sub-rotund, irregular, outer peridium thick, white, inner ash-colour, columella none, flocci and spores black-brown.—*Fr. S.M.* iii. p. 109. *Nees. f.* 105 ? *Eng. Fl.* v. p. 312.

On dead oak leaves.

Outer peridium crustaceous, white, like the shell of some small egg, inner peridium in the dry state brownish, except at the base, where it is adnate and rufous.—*Eng. Fl.*

1116. Diderma deplanatum. *Fr.* "Depressed Diderma."

Sessile, rounded, outer peridium thick, white, inner very thin, hyaline, columella and flocci none, spores black-brown.—*Fr. S.M.* iii. p. 110. *Hoff. F.G. t.* 9, f. 2. *Eng. Fl.* v. p. 312.

On dead oak leaves. Appin.

When the spores have fallen out, the base within is of a somewhat tawny tinge. There are a few flocci.—*Eng. Fl.*

1117. Diderma contextum. *Fr.* "Interwoven Diderma."

Sessile, crowded; peridia elongated, flexuose, outer lemon-coloured; inner whitish-yellow, columella none, flocci white,

spores dingy.—*Fr. S.M.* iii. p. 111. *Sturm.t.* 39. *Berk. Ann. N.H.* no. 109. *Bisch.f.* 3624.

On dead grass, fern, &c. Wothorpe. [United States.]

Gen. 80.

DIDYMIUM, Schrad.

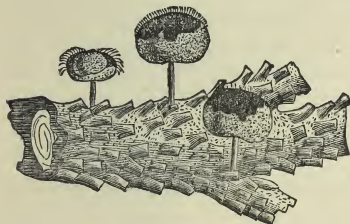


Fig. 125.

Peridium scaly or floccose, bursting irregularly.—*Berk. Outl.* p. 307.

(*Fig.* 125.)

Inner peridium very delicate; membranaceous, bursting irregularly, externally clothed with the bark-like outer peridium, which breaks up into little furfuraceous scales or mealy down.—*Eng. Fl.* v. p. 312.

1118. Didymium melanopus. *Fr.* "Black-stemmed Didymium."

Peridium hemispherical, depressed, erect, farinose, plano-umbilicate beneath, grey; stem subulate, black, as well as the columella; spores dingy brown.—*Fr. S.M.* iii. p. 114. *Berk. Ann. N.H.* no. 382. *Bisch.f.* 3669.

On bramble.

[United States.]

var. β . clavus. *Fr.* Stem substriate, peridium farinoso-villose, concave beneath, black.—*Ann. N.H.* no. 110, *A. & S.* t. 2, f. 2.

On various substances.

1119. Didymium hæmisphericum. *Fr.* "Hemispherical Didymium."

Peridium hemispherical, depressed, erect, with a whitish veil, plano-umbilicate beneath; stem short, thick, whitish; columella obsolete; spores sooty-black.—*Fr. S.M.* iii. p. 115. *Bull. t.* 446, f. 1. *Sow. t.* 12. *Fl. Dan. t.* 1972, f. 2.

On dead twigs, &c.

The curious flat subhemispherical peridia, with a broad shallow umbilicus beneath, and the short, dirty-white stem, are characteristic.—*Eng. Fl.*

1120. Didymium furfuraceum. *Fr.* "Scurfy Didymium."

Peridium lenticular, cernuous, flocculoso-farinaceous, whitish-cinereous, columella none; stem whitish, even; spores blackish.

—*Fr. S.M.* iii. p. 116. *B. & Br. Ann. N.H.* no. 734. *Fl. Dan. t.* 2092, f. 2.

On dead leaves (and oak branches?). [United States.]

1121. *Didymium tigrinum.* *Fr.* "Spotted Didymium."

Peridium lenticular, erect, umbilicate beneath, black, covered with greenish-yellow furfuraceous scales; stem elongated, yellowish, columella brown, spores sooty-black.—*Fr. S.M.* iii. p. 117. *Schrad. t.* 6. f. 2, 3. *B. & Br. Ann. N.H.* no. 383. *Fl. Dan. t.* 1434, f. 1.

On decayed wood. [Mid. Carolina.]

According to the "Annals" this species has been found on mosses and *Jungermannia*.

1122. *Didymium squamulosum.* *A. & G.* "Scaly Didymium."

Peridium globose-depressed, umbilicate beneath, cinereous, covered with minute scales of the same colour, stem very short, even, white, columella white, spores brownish-black.—*Fr. S.M.* iii. p. 118. *A. & S. t.* 4. f. 5. *Eng. Fl.* v. p. 312. *Bisch. f.* 3676. *Kl. exs.* ii. no. 455.

On dead leaves, &c. [United States.]

1123. *Didymium farinaceum.* *Fr.* "Mealy Didymium."

Peridium subrotund, very thin, blackish, clothed with cinereous flocculose meal; stem short, brown-black, as well as the spores.—*Fr. S.M.* iii. p. 119. *Hall. t.* 48, f. 2. *Sow. t.* 240. *Schrad. t.* 5, f. 6. *Eng. Fl.* v. p. 313. *Fl. Dan. t.* 2094, f. 1. *Kl. exs.* no. 423, ii. no. 138. *Fckl. exs.* no. 1461.

On dead leaves, &c. [United States.]

(*Fig.* 125.)

1124. *Didymium nigripes.* *Fr.* "Black-stemmed Didymium."

Peridium globose, grey from the delicate meal with which it is clothed; stem elongated, rigid, even, black; columella obsolete, flocci and spores dingy-brown.—*Fr. S.M.* iii. p. 119. *Eng. Fl.* v. p. 313. *Sturm. t.* 42. *Bisch. f.* 3612. *Trichia alba*, *Purt.* no. 1113.

On rotten wood.

Remarkable for its dark, stiff, hair-like stem.

1125. *Didymium pertusum*. Berk. "Pierced Didymium."

Scattered; peridium white, mealy, depresso-globose, deeply but narrowly umbilicate; stem attenuated upwards, rufous; columella central, white; flocci brownish; spores brown-black.—*Eng. Fl.* v. p. 313. *Berk. Outl.* p. 307.

On dead herbaceous stems. Appin.

This approaches very near to *D. xanthopus*, but the columella is not truly stipitate, but only apparently so from the great depth of the umbilicus.—*M. J. B.*

1126. *Didymium xanthopus*. Fr. "Yellow-stemmed Didymium."

Peridium globose, brown, whitish-pruinose; stem elongated, even, yellow; columella stipitate, whitish, flocci and spores dingy brown.—*Fr. S.M.* iii. p. 120. *Sturm. t.* 43. *Berk. Ann. N.H.* no. 111. *Bisch. f.* 3682. *Kl. exs.* no. 737.

On dead leaves, (ivy &c.)

[United States.]

(Fig. 126.)

Fig. 126.

1127. *Didymium leucopus*. Fr. "White-stemmed Didymium."

Minute globoso-depressed, pale glaucous, stem very short, thick, pale, then brownish.—*Fr. S.M.* iii. p. 121 (partly). *Grev. Fl. Ed.* 454. *Eng. Fl.* v. p. 313. *Fckl. exs.* no. 1462.

On dead beech wood. Autumn. Near Edinburgh.

[United States.]

Very minute, of an uncommonly stiff and dwarf aspect, filaments very few. Differs from Link's *P. leucopus* only in having a coloured stem.—*Grev.* Minute, globose, white, stem white, slightly entering the peridium, flocci white.—*Fries.*

1128. *Didymium Sowerbicii*. Berk. "Sowerby's Didymium."

Sub-fasciculate, peridium globose, dark grey, umbilicated beneath, stem slender, columella white.—*Eng. Fl.* v. p. 313. *Sow. t.* 412, f. 3.

On a decaying bulb in a parlour. London.

1129. Didymium lobatum. *Nees.* "Lobed Didymium."

Sub-sessile, peridium sub-rotund, or variable, somewhat lobed, black; clothed with whitish scurf, columella depressed, flocci and spores black-brown.—*Fr. S.M.* iii. p. 123. *Eng. Fl.* v. p. 314. *Nees. f.* 104. *Bisch. f.* 3684. *Fl. Dan. t.* 2094, f. 2.

On moss.

[United States.]

1130. Didymium congestum. *B. & Br.* "Crowded Didymium."

Crowded, stems sub-membranaceous, hyaline; peridia obovate, elongated; spores black, variegated with white flocci.—*Ann. N.H. no.* 384. *Fl. Dan. t.* 1973, fig. 1, lower fig.

On dead leaves, grass, &c. King's Cliffe.

[N. Carolina, U.S.]

Forming crowded patches, very much resembling those of *Diachæa elegans*. Peridia obovate-oblong, cinerous, with a white mealy coat; stems hyaline, membranaceous, generally distinct, though crowded, springing from a thin subjacent membrane. Spores black, variegated with the white coarse, irregular, here and there lacunose flocci. The globose spores appear at first sight to be granulated, but on closer inspection the granules are found to arise from the disintegrated outer peridium.—*M. J. B.*

1131. Didymium dædaleum. *B. & Br.* "Spreading Didymium."

Stems short, coalescing; peridia connate, sinuate, dædaloid, pale reddish brown, as well as the stems, farinaceous; flocci white, spores purplish-black.—*Ann. N.H. no.* 385.

In a cucumber frame. April. Milton, Norths.

Spreading far and wide in little subglobose masses; stems reddish-brown, inclining to orange, connate, as if composed of a mass of little flat bran-like membranes; peridia connate, sinuated, forming a dædaloid mass of the same colour as the stem, but sprinkled with white meal, and having to the eye a greyish tinge from the contained spores, which are purplish-black, smooth, and globose, variegated with the white flocci, which are frequently forked, and vary greatly in width, being in parts broad, flat, and membranous.—*M. J. B.*

1132. Didymium physarioides. *Fr.* "Black Didymium."

Peridia crowded, subrotund, irregular, black; covered with a whitish powder, columella none, spores conglobated, blackish.—*Fr. S.M.* iii. p. 125. *Eng. Fl.* v. p. 314. *Kl. exs. no.* 176.

On rotten stumps, moss, &c. Appin.

[Low Carolina.]

1133. Didymium cinereum. *Fr.* "Cinereous Didymium."

Adnate, peridia subglobose, whitish; clothed with ashy-cinereous scurf, flocci reticulated, white; spores black.—*Fr. S.M.* iii. p. 126. *Batsch. f.* 169. *Eng. Fl.* v. p. 314.

On bark and wood. Appin. [United States.]

Springing from white, gelatinous, serpentine threads. Inner peridium very delicate, reflecting prismatic colours; flocci flat, white, irregularly reticulated.—*Eng. Fl.*

1134. Didymium serpula. *Fr.* "Flexuous Didymium."

Flattened; peridium elongated, creeping, vein-like, flexuose, and reticulated, lead-coloured; clothed with whitish scurf; spores compact, black.—*Fr. S.M.* iii. p. 126. *Eng. Fl.* v. p. 314. *B. & Br. Ann. N.H.* no. 1035. *Fckl. exs.* no. 1463.

On leaves. Nov. Dec. Appin, Batheaston.

Gen. 81.**PHYSARUM, P.**

Fig. 127.

Peridium simple, membranaceous, very delicate, naked, quite smooth, bursting irregularly. Columella none.—*Berk. Outl.* p. 307. *Eng. Fl.* v. p. 314.

(*Fig. 127.*)

1135. Physarum nutans. *P.* "Nodding Physarum."

Peridium lenticular, umbilicate beneath, even, at length sub-squamulose, cernuous; stem subulate, even, brownish, flocci very delicate, whitish, spores brownish-black.—*Fr. S.M.* iii. p. 128. *Eng. Fl.* v. p. 314. *Pers. Syn.* p. 203. *Bull. t.* 407, *f.* 3, *t.* 470, *f.* 1. *Fl. Dan. t.* 2096, *f.* 1. *Bisch. f.* 3616. *Rabh. F.E.* no. 40. *Fckl. exs.* no. 1457.

On decayed wood. [United States.]

var. β. viride. Peridium green.—*Eng. Fl.* v. p. 314. *Sturm. t.* 24. *Bull. t.* 407, *f.* 1. *Nees. f.* 108.

On decayed wood. [United States.]

var. γ. aureum. Peridium golden-yellow.—*Pers. Disp. t.* 1, *f.* 6. *Sturm. t.* 23. *Grev. t.* 124. *Fl. Dan. t.* 2096, *f.* 2. *Fckl. exs.* no. 1456.

On decayed wood. [United States.]

The stem when dry is longitudinally plicate. The flocci appear to be dark unless carefully cleared from the spores. (*Fig. 127, nat. size and enlarged.*)

1136. Physarum bulbiforme. *Schum.* "Bulb-like Physarum."

Peridium hemispherical, umbilicate beneath, erect, purple-black; stem attenuated, sulcate, whitish; flocci and spores brownish-black.—*Fr. S.M.* iii. p. 131. *Eng. Fl.* v. p. 315. *Fl. Dan.* t. 1974, f. 3.

On rotten wood.

1137. Physarum rubiginosum. *Chev.* "Rusty Physarum."

Peridium globoso-turbinate, rust-red, as well as the slender even stem; flocci reticulated, white; spores black.—*Fr. S.M.* iii. p. 137. *Chev.* p. 338. *Eng. Fl.* v. p. 315.

On trunks amongst moss. Appin.

The stem penetrates the peridium, but from the close adherence of the coat, not in such a manner as to form an evident umbilicus, nor distinct columella, and it is not paler than the peridium, nor is the hypothallus paler. The upper portion of the peridium is nearly white, as if bleached.—*Eng. Fl.*

1138. Physarum lilacinum. *Fr.* "Lilac Physarum."

Crowded; peridia sessile, obovate, even, lilac, or flesh coloured; flocci few, white; spores black.—*Fr. S.M.* iii. p. 141. *B. & Br. Ann. N.H.* no. 215.

On decayed wood. Nov. King's Cliffe.

The only English specimen was found on the smooth bark of a fallen oak twig.

1139. Physarum metallicum. *Berk.* "Metallic Physarum."

Peridium subglobose, slightly depressed, a line or more in breadth, sessile (not adnate), quite smooth, very delicate, of a most beautiful metallic appearance, bursting irregularly. Flocci and spores pink-grey.—*Mag. Zool. & Bot.* no. 29, t. 3, f. 8.

On a decorticated stick. Nov. Clifton, Notts.

This most beautiful plant connects *Lycogala* with *Physarum*, in consequence of its bright-coloured sporidia. The peridium is, however, perfectly simple.—*M. J. B.*

1140. Physarum album. *Fr.* "White Physarum."

Peridia very delicate, subrotund, depressed, even, whitish; flocci few, delicate, loose, black, as well as the spores.—*Fr. S.M.* iii. p. 147. *Kl. exs.* no. 456. *Eng. Fl.* v. p. 316. *Lycogala minuta.* *Grev.* t. 40. *Fckl. exs.* no. 1459.

On various substances. Common. [Low. Carolina.]

Sporidia, globose, or sub-elliptic.

1141. Physarum atrum. *Fr.* "Black Physarum."

Aggregated, crowded, confluent, black, peridia very delicate,

rounded; flocci none, spores black.—*Fr. S.M.* iii. p. 147. *Berk. Ann. N.H.* no. 216.

On fallen oak branches. King's Cliffe. [United States.]

Also a much smaller variety on cabbage stalks.

Gen. 82. ANGIORIDIUM, Grev.

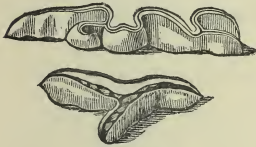


Fig. 128.

Peridium membranaceous, opening by a longitudinal fissure; flocci adhering to the peridium on all sides, reticulate, flat, ending above in the inner peridium.—*Berk. Outl.* p. 308. (Fig. 128.)

1142. Angioridium sinuosum. Grev. "Twisted Angioridium."

Peridia compressed, elongato-flexuose, venulose, whitish, cine-reous, splitting in a labiate manner, flocci capillary, white, reticulated, spores black-brown.—*Grev. t.* 310. *Physcarum sinuosum. Fr. S.M.* iii. p. 145. *Eng. Fl.* v. p. 315. *Bull. t.* 446, f. 3. *Sow t.* 6. *Pers. Ob. i. t.* 1, f. 2. *Bisch. f.* 3623. *Kl. exs.* ii. no. 761. *Fckl. exs.* no. 1466.

On various substances.

[United States.]

Gregarious whitish. Peridium about $\frac{1}{2}$ in. high, simple, sessile, papyraceous, somewhat rigid, fragile, rugulose, varying in form sometimes exactly like a roundish bivalve shell, at others lengthened out at each extremity in a creeping flexuose manner for a $\frac{1}{2}$ in. or more, and either simple or divided. It is, however, always erect, and vertically compressed, the summit forming a sharp edge. When mature it bursts longitudinally, the two plates separating at the margin, sufficiently to allow the spores to escape. Spores globose, blackish, forming a compact mass.—*Grev.* (Fig. 128.)

Gen. 83.

BADHAMIA, Berk.

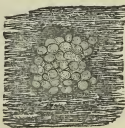


Fig. 129.

Peridium naked or furfuraceous. Spores in groups enclosed at first in a hyaline sac.—*Berk. Outl.* p. 308. *Linn. Trans.* xxi. p. 153. (Fig. 129.)

Peridium simple, externally naked, or very rarely submentose, apex at length opening with a lacerated fissure, flocci loosely reticulated, affixed to the walls of the peridium, here and there expanded in lamina, frequently triangular. Spores globose, or sub-

angular, at first included in a common sac, at length free, conglobato-ad-nate.—*M. J. B.*

1143. *Badhamia hyalina.* *Berk.* “Hyaline *Badhamia*.”

Peridia globose, inflated, very delicate, whitish, stems fasciculate, flaccid, ascending, rufous; flocci white; spores black.—*Berk. Linn. Trans.* xxi. t. 19, f. 3. *Physarum hyalinum.* *Fr. S.M.* iii. p. 139. *Eng. Fl.* v. p. 315. *Pers. Disp.* t. 2, f. 4. *Berk. Ann. N.H.* no. 213. *Fl. Dan.* t. 2093, f. 1.

On rotten wood. Appin. Lambley, Notts. [Mid. Carolina.]

1144. *Badhamia fulvella.* *Berk.* “Tawny *Badhamia*.”

Peridia gregarious, sessile, globose, black, invested with a delicate tawny down; flocci whitish.—*Linn. Trans.* xxi. p. 154. *Ann. N.H.* no. 733.

On dead wood. East Bergholt, Suffolk.

Peridium very thin, black apparently, but yellow when divested of the spores. Gregarious, but not forming distinct patches, sessile, globose, clothed with very delicate, tawny down; mother-cells ($\cdot 001$ in.) $\cdot 025$ m.m. diameter; spores ($\cdot 0005$ - $\cdot 00075$ in.) $\cdot 0125$ - $\cdot 018$ m.m., black, forming a compact mass. Flocci often swollen in the middle, whitish. The habit is that of a *Didymium* rather than of a *Physarum*.

1145. *Badhamia pallida.* *Berk.* “Pallid *Badhamia*.”

Peridia sessile, depressed, sub-lentiform, crowded here and there, or scattered, pallid-yellow; flocci yellow; spores large; granulate; central vesicle large.—*Berk. Trans. Linn. Soc.* xxi. p. 153, t. 19, f. 2. *Ann. N.H.* no. 732.

On decayed oak branches. March. East Bergholt.

At first exhibiting more or less effused cream-coloured patches, which gradually assume a yellow tinge, and from which arise a few irregular groups of yellow depressed peridia, some of which are confluent, somewhat wrinkled. Flocci evidently continued from the peridium, and of the same colour, branched, forming triangular spaces at the origin of the branches. Mother cells $\cdot 05$ m.m. ($\cdot 00175$ - $\cdot 002$ in.) diameter, spores slightly granulated, ($\cdot 0005$ - $\cdot 0008$ in.) $\cdot 0127$ - $\cdot 02$ m.m. long, attached to a large central vesicle. The peridium consists of a membrane, rough with very minute granules, which become more dense where the flocci are produced. In old specimens the patches assume an olive tinge.

1146. *Badhamia nitens.* *Berk.* “Shining *Badhamia*.”

Peridia subsessile, depressed, crowded, shining yellow, flocci yellow; spores externally strongly echinulate.—*Trans. Linn. Soc.* xxi. p. 153. t. 19, f. 1. *Ann. N.H.* no. 731.

On decayed oak branches. Feb. East Bergholt, Suffolk.

Forming little crowded orbicular patches, consisting of depressed sub-lentiform peridia of a bright persistent yellow, perfectly sessile, at length bursting above and dispersing their dark spores, so as to form a border resembling the stains produced by the sporidia of *Sphaeria inquinans*. Flocci yellow, broad. Spores at first contained in a common vesicle, which bursts or is absorbed, and exposes them in the form of little globose branches, often supported by an articulated thread, strongly echinulate, externally smooth towards the common axis. Mother cells $\cdot 025\text{--}\cdot 04$ m.m. ($\cdot 001\text{--}\cdot 00175$ in.) diameter; spores ($\cdot 0004\text{--}\cdot 0005$ in.) $\cdot 01\text{--}\cdot 0125$ m.m.

1147. *Badhamia utricularis*. Berk. "Steel-blue Badhamia."

Peridia oblong, inflated, very delicate, steel-blue, when empty whitish; stems sub-adnate, flaccid, yellowish; flocci white; spores black.—*Berk. Linn. Trans.* xxi. p. 153. *Physarum utricularare*. *Fr. S.M.* iii. p. 139. *Bull. t.* 417, f. 1. *Berk. Ann. N.H.* no. 214. *Fl. Dan. t.* 2093, f. 2.

On wood. King's Cliffe.

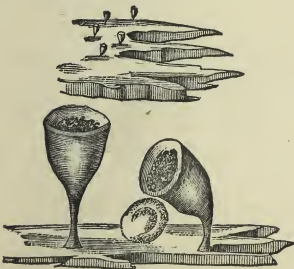
1148. *Badhamia inaurata*. Curr. "Bright-yellow Badhamia."

Gregarious; peridia sessile, globose, or nearly so, bright yellow, $\frac{1}{24}$ in. across, covered with floccose yellow scales, opening by irregular fissures; sporidia subglobose, very minutely punctate, enclosed at first in hyaline sacs.—*Curr. Linn. Trans.* xxiv. t. 25. f. 8. *B. & Br. Ann. N.H.* no. 1034.

On *Jungermannia*. Oct. Paul's Cray Common.

Spores ($\cdot 0004\text{--}\cdot 0006$ in.) $\cdot 01\text{--}\cdot 015$ m.m.

Gen. 84. CRATERIUM, Trent.



Peridium simple, papyraceous, rigid, persistent, closed at first with a decided operculum. Flocci congested, erect.—*Berk. Outl. p.* 308. *Eng. Fl. v. p.* 316. (*Fig.* 130.)

Fig. 130.

* Operculum distinct, chalky.

1149. *Craterium pedunculatum.* Trent. "Stalked Craterium."

Peridium cyathiform, subcernuous, chestnut, operculum firm, chalk-white; stem elongated, even, saffron-yellow; spores black.—*Fr. S.M.* iii. p. 150. *Eng. Fl.* v. p. 316. *Mich. t.* 86, f. 13. *Hoffm. Cr. t.* 2, f. 2. *Sturm.* iii. t. 9. *Nees. f.* 120. *Chev. t.* 4, f. 26. *Bisch. f.* 3666. *Kl. exs.* ii. no. 139. *Fckl. exs.* no. 1453.

On mosses, sticks, leaves, &c. [Mid. Carolina.]

Gregarious, stems capillary, equal, even, shining, base adnate to a very delicate, membranaceous, whitish hypothallus, soon vanishing. Peridium cup-shaped, somewhat nodding, dark bright brown; operculum plane, orbicular, seated below the prominent margin; flocci white; spores black, globose. (*Fig.* 130.)

1150. *Craterium pyriforme.* Ditm. "Pear-shaped Craterium."

Peridium pyriform, nearly erect, ochraceous, as well as the short even stem; operculum firm, chalk-white; spores black.—*Fr. S.M.* iii. p. 150. *Sturm. t.* 10. *Bisch. f.* 3667. *Pay. f.* 578. *Fckl. exs.* no. 1454.

On bark. Appin.

Constantly differing from *C. pedunculatum* in the form and colour of the peridium, and in the shorter stem. Peridium generally contracted above.

** Operculum circumscissile, parting from the peridium.

1151. *Craterium minutum.* Fr. "Little Craterium."

Peridium pyriform, erect, yellowish; operculum convex, of the same colour; stem short, even, rufescent; spores black.—*Fr. S.M.* iii. p. 151. *Eng. Fl.* v. p. 316. *Bull. t.* 484, f. 1. *Cyathus minutus.* *Sow. t.* 239.

On moss leaves, &c. Common.

Stem short, rather firm, equal, even, purplish expanding into the peridium, hypothallus orbicular, brownish; peridium always erect, pyriform, rufous, then yellow, apex at first rounded; operculum convex circumscissile, of the same colour, growing whitish. This is the commonest species.

** * Operculum very delicate, evanescent.

1152. *Craterium leucocephalum.* Ditm. "White-headed Craterium."

Peridium turbinate, erect, bright brown, growing pale, operculum very thin, evanescent; stem striate, bay; flocci white;

spores black.—*Fr. S.M.* iii. p. 153. *Eng. Fl.* v. p. 316. *Mich. t.* 86, f. 14. *Grev. t.* 65. *Cyathus cinereus. Purt. t.* 35. *Hoffm. Fl.* 9. t. 6, f. 1. *Fl. Dan. t.* 1314, f. 2. *Sturm. t.* 11. *Bisch. f.* 3665.

On various substances.

[United States.]

Hypothallus, or orbicular spot, bay, soon obsolete; peridium top-shaped, at first bay, then becoming paler, yellowish, or whitish-mealy with age.

1153. Craterium mutabile. *Fr.* "Changeable Craterium."

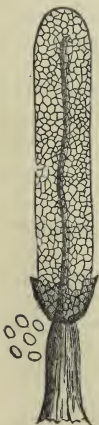
Peridium sub-rotund, or turbinate, lacerated, erect; base, and short striate stem, golden-yellow, flocci yellowish; spores black. *Fr. S.M.* iii. p. 154. *Eng. Fl.* v. p. 316. *Fl. Dan. t.* 2087, f. 2, *Fckl. exs. no.* 1455.

On bark, moss, &c. July. Aug. Appin.

Peridium continuous, with the striate stem obovate above, and lacerated, at length more open and cup-shaped; scarcely any true operculum; stem short, thick, equal, or dilated upwards, sulcate. Colour of the whole fungus golden-yellow, the peridium at length becoming paler.

Gen. 85.

DIACHÆA, Fr.



Peridium very delicate, simple, falling off in fragments. Capillitium, sub-reticulate, springing from a grumous pallid columella.—*Berk. Outl. p.* 308. (Fig. 131.)

1154. Diachæa elegans. *Fr.* "Elegant Diachæa."

Hypothallus persistent; peridium ovato-oblong, deciduous, violet or steel-blue; stem attenuated, thick, shorter than the peridium, white.—*Fr. S.M.* iii. p. 156. *Berk. Ann. N.H. no.* 112. *Bull. t.* 502, f. 2. *Corda. Ic. v. f.* 38. *Pay. f.* 582. *Kl. exs. no.* 1229. *Fckl. exs. no.* 1451.

On dead leaves, &c. King's Cliffe.

[United States.]

(Fig. 131.)

Fig. 131.

Gen. 86.

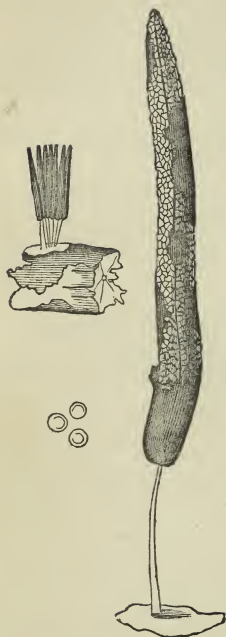
STEMONITIS, Gled.

Fig. 132.

Peridium very delicate, simple, evanescent. Capillitium reticulate, springing from the dark penetrating stem.—*Berk. Outl. p. 308. Eng. Fl. v. p. 317.* (Fig. 132.)

1155. Stemonitis fusca. *Roth.*
"Brown Stemonitis."

Fasciculate, hypothallus persistent, peridia very fugacious, cylindrical, as well as the capillitium; spores black-brown.—*Fr. S.M. iii. p. 157. Eng. Fl. v. p. 317. Nees. f. 118. Grev. t. 170. Mich. t. 94, f. 1. Ehr. S.B. f. 5. Jacq. Misc. ii. t. 15. Fl. Dan. t. 659, f. 1, t. 2016, f. 2. Bisch, f. 3661. Kl. exs. ii. no. 457. Fckl. exs. no. 1449. Trichia nuda. Sow. t. 50. Bolt. t. 93, f. 1.*

On rotten wood. Common.

[United States.]

(Fig. 132.)

1156. Stemonitis ferruginea. *Ehrb.* "Rusty Stemonitis."

Fasciculate, hypothallus persistent, peridia fugacious, cylindrical as well as the capillitium; spores reddish, then ferruginous.—*Fr. S.M. iii. p. 158. Bull. t. 477, f. 1. Ehr. S.B. f. 6 A.B. Fl. Dan. t. 2016. f. 1. Bisch. f. 3704. Pay. f. 580. Fckl. exs. no. 1448.*

On old stumps.

[United States.]

Similar to the foregoing, but the spores are much smaller, and of a different colour.

- 1157. *Stemonitis typhoides.* *D.C.* "Club-mace
 Stemonitis."**

Gregarious, hypothallus evanescent, peridia fugacious, capillitium and spores brownish.—*Fr. S.M.* iii. p. 158. *Mich. t.* 94, f. 2. *Fl. Dan. t.* 216. *Schæff. t.* 297. *Batsch. t.* 30, f. 176. *Bull. t.* 477, f. 2. *Ehr. S.B. f.* 7. *Ann. N.H. no.* 113. *Kl. exs. no.* 923. *Fckl. exs. no.* 1450.

On rotten wood.

[Low & Mid. Carolina.]

- 1158. *Stemonitis ovata.* *P.* "Ovate *Stemonitis.*"**

Scattered, peridium very fugacious, ovate, steel-blue, capillitium purplish, spores brown; stem semi-penetrating.—*Fr. S.M.* iii. p. 160. *Kl. exs. no.* 1132. *Eng. Fl. v. p.* 317. *Fckl. exs. no.* 1446. *Trichia alba. Sow. t.* 259.

On rotten wood.

[United States.]

- 1159. *Stemonitis obtusata.* *Fr.* "Obtuse *Stemonitis.*"**

Scattered, peridium globose, fugacious, blackish; capillitium black-brown, stem slightly penetrating.—*Fr. S.M.* iii. p. 160. *Eng. Fl. v. p.* 317. *Fl. Dan. t.* 2091, f. 2.

On wood. Apethorpe, Norths.

[United States]

At first white, then ruddy brown.

- 1160. *Stemonitis pulchella.* *Bab.* "Beautiful
 Stemonitis."**

Very minute, hypothallus brownish; peridia scattered, evanescent; stem rather short, incrassated below, not reaching the apex; capillitium purplish, ovate-oblong, scarcely ventricose; spores purplish brown.—*Berk. Ann. N.H. no.* 217, t. 12, f. 11. *Bab. Abst. Linn. Trans.* 1839.

On *Pteris aquilina.* Sept. Leicestershire.

Extremely minute, not 1 line high, scattered, with a transparent horn-brown hypothallus; peridium extremely evanescent; stem vanishing a little below the apex, giving off filaments on every side; the free part rather short, smooth, dark, slightly incrassated below, capillitium ovato-oblong, purplish-brown; spores purple-brown.—*M. J. B.*

- 1161. *Stemonitis physarioides.* *A. & S.* "Coppery
 Stemonitis."**

Peridium globose, obtuse, persistent, silvery, at length torn, capillitium sub-compact black-brown, stem long, semi-penetrat-

ing, brown-black.—*Fr. S.M.* iii. p. 162. *Sow. t.* 412, f. 3. *A. & S. t.* ii. f. 8. *B. & Br. Ann. N.H.* no. 386.

On mossy stumps. Northamptonshire.

[Carolina, Ohio, U. S.]

"Our specimens have a beautiful coppery tinge."—*B. & Br.*

1162. Stemonitis violacea. *P.* "Violet Stemonitis."

Peridium lenticular, steel-blue, fugacious, umbilicate beneath; capillitium whitish, lax, spores blackish, stem short semi-penetrating.—*Fr. S.M.* iii. p. 162. *B. & Br. Ann. N.H.* no. 387.

On moss. Common.

1163. Stemonitis arcyrioides. *Somm.* "Violet Stemonitis."

Peridium globose, violaceous steel-blue, base somewhat persistent, capillitium globose; spores brownish; stem short, semi-penetrating.—*Fr. S.M.* iii. p. 162. *Ann. N.H.* no. 114. *Fckl. exs.* no. 1447.

On dead laurel leaves, &c.

Gen. 87. **ENERTHENEMA,** *Bowm.*



Peridium very delicate, simple, evanescent, except at the apex, where it is adnate with the dilated top of the penetrating dark stem. Capillitium dependent, attached to the dilated disc. Spores surrounded by a cyst.—*Bowm. Linn. Trans.* xvi. p. 151. *B. & Br. Ann. N.H.* no. 388.

(*Fig.* 133.)

Fig. 133.

1164. Enerthenema elegans. *Bowm.* "Bowman's Enerthenema."

Peridium globose, very fugacious, at length cinereous, apex papillary from the excurrent stem. Capillitium and spores black-brown.—*Bowm. Linn. Trans.* xvi. p. 151, t. 16. *B. & Br. Ann. N.H.* no. 388, t. 11, f. 7. *Berk. Outl. t.* 1, f. 6. *C. Stemonitis papillata, Eng. Fl.* v. p. 317. not *Persoon.*

On rotten wood.

[Low. Carolina.]

(*Fig.* 133, thread and spores magnified.)

Gen. 88.

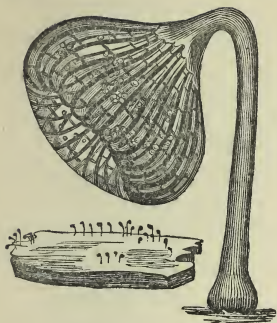
DICTYDIUM, Schrad.

Fig. 134.

Peridium simple, very delicate, reticulated or veined from the innate capillitium.—*Berk. Outl. p. 309. Eng. Fl. v. p. 317. (Fig. 134.)*

1165. Dictydium umbilicatum.
Schrad. "Depressed Dictydium."

Peridium cernuous, umbilicate, veins parallel, joined by others which are transverse; spores purplish-brown.—*Fr. S.M. iii. p. 165. Eng. Fl. v. p. 318. Batsch. f. 232. Schrad. t. 4, f. 1. Nees. f. 117.*

Grev. t. 153. Corda. Ic. v. f. 36. Bisch. f. 3672. Pay. f. 573. Kl. exs. no. 820. Fckl. exs. no. 1445.

On rotten wood, pine stumps, &c.

[United States.]

(Fig. 134.)

Gen. 89.

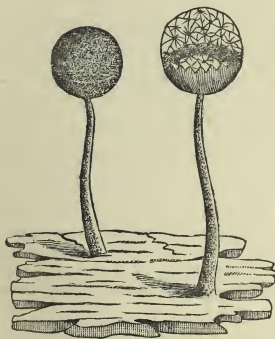
CRIBRARIA, Schrad.

Fig. 135.

Peridium simple, persistent below, vanishing above. Flocci innate, forming a free network in the upper half of the peridium.—*Berk. Outl. p. 309. Eng. Fl. v. p. 318. (Fig. 135.)*

1166. Cribraria intermedia.
Berk. "Sowerby's Cribraria."

Peridium globose, yellow, ex-cipulum entire, stem pellucid, white, tapering upwards, spores yellow.—*Eng. Fl. v. p. 318. Sphaerocarpus semitrichioides, Sow. t. 400, f. 5.*

On rotten wood.

1167. Cribraria intricata. *Schrad. "Intricate Cribraria."*

Peridium sub-rotund, nearly erect, reticulations unequal, spores dirty yellow.—*Fr. S.M. iii. p. 173. Schrad. t. 3, f. 1.*

On decayed fir stumps. July. Weybridge. [United States.]
(Fig. 135.)

1168. *Cribraria argillacea.* Pers. "Clay-coloured Cribraria."

Gregarious, clay-coloured, somewhat rounded; stem rather short, blackish, reticulations equal, spores clay-coloured.—*Pers. Obs. i. p. 90. Schrad. t. 2, f. 1, 2. B. & Br. Ann. N.H. (1865) no. 1036. Fr. S.M. iii. p. 172. Chev. t. 9, f. 25.*

On decayed branches and stumps of Scotch fir. Aboyne.
[Mid. Carolina.]

Forming broad confluent patches, pouring out a large quantity of clay-coloured dust. The least beautiful of the genus, though when cleared from the spores, the plant is a pretty object under the microscope.—*M. J. B.*

1169. *Cribraria aurantiaca.* Fr. "Orange Cribraria."

Peridium spherical, somewhat nodding, tawny; reticulations equal; spores bright yellow.—*Fr. S.M. iii. p. 174. B. & Br. Ann. N.H. (1865), no. 1037. Pay. f. 583. Schrad. t. 1, f. 3, 4. Fl. Dan. t. 2085, f. 1. Corda Ic. v. f. 35. Bisch. f. 3678.*

On decayed branches of Scotch fir. Aboyne.

A very pretty, though minute species.

Gen. 90.

ARCYRIA, Hill.

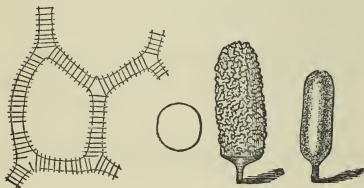


Fig. 136.

Peridium simple, upper portion very fugacious. Capillitium elastic. Flocci not spiral.—*Berk. Outl. p. 310. Eng. Fl. v. p. 318.*
(Fig. 136.)

In this genus the threads of the capillitium have a row of little tubercles on one side only, or if not confined

to one side, some of them are more strongly developed. In some instances they form rings round the threads.

1170. *Arcyria punicea.* P. "Splendid Arcyria."

Peridia crowded, stipitate, subovate, capillitium elongated; spores bright purplish vermillion.—*Fr. S.M. iii, p. 177. Eng. Fl. v. p. 318. Wig. Ann. Sc. Nat. (1862), xvi. t. 16, f. 6-7. Fckl. exs. no. 1441. Mich. t. 94, f. 1. Hall t. 48, f. 6. Fl. Dan. 1364, f. 2. Nees. f. 114. Grev. t. 130. Bull. t. 368. Batsch. f. 177. Clathrus*

denudatus. Bolt. t. 93, f. 2. Jacq. Misc. t. 6. *Trichia denudata*. Sow. t. 49. Purt. t. 24, f. 2. Kl. exs. no. 932.

On rotten stumps. Common. [United States.]

1171. Arcyria incarnata. P. "Flesh-coloured Arcyria."

Peridia crowded, substipitate, ovate, capillitium elongato-effuse, flesh-coloured, as well as the spores.—Fr. S.M. iii. p. 178. Eng. Fl. v. p. 318. Mich. t. 94, f. 2. Pers. Obs. 1, t. 5, f. 4-5. Sturm. t. 44. Fckl. exs. no. 1442. Wig. Ann. Sc. Nat. (1862) xvi. t. 16, f. 8-9. Bisch. f. 3663. Fl. Dan. t. 2090, f. 1. Schnizl. f. 34-35.

On rotten wood. [United States]

Smaller than *A. punicea*, and more shortly stipitate. In that the peridium is venose, in this veinless.—Eng. Fl. (Fig. 136.)

1172. Arcyria cinerea. Schum. "Grey Arcyria."

Gregarious, peridia stipitate, globoso-ovate, cinereous; capillitium ovato-cylindrical, glaucous, as well as the spores.—Fr. S.M. iii. p. 180. Eng. Fl. v. p. 318. Bull. t. 477, f. 3. Pers. Disp. t. 1, f. 2. Fl. Dan. t. 1975, f. 1. Wig. Ann. Sc. Nat. (1862) xvi. t. 16, f. 10-12. Fckl. exs. no. 1440.

On wood. Appin. [United States.]

1173. Arcyria nutans. Fr. "Nodding Arcyria."

Crowded; peridia cylindrical, capillitium very long, nodding; dirty yellow, as well as the spores.—Fr. S.M. iii. p. 180. Eng. Fl. v. p. 319. Bull. t. 502, f. 3. Wig. Ann. Sc. Nat. (1862) xvi. t. 16, f. 13-15. Fckl. exs. 1339. *Trichia nutans*. Sow. t. 260. Purt. t. 24, f. 1. *Arcyria flava*. Grev. t. 309. Fl. Dan. t. 2017, f. 1. Kl. exs. no. 421.

On rotten wood. [United States.]

1174. Arcyria umbrina. Schum. "Umber Arcyria."

Gregarious, peridia stipitate, ovate, umber, capillitium ovate, erect, ochraceous, as well as the spores.—Fr. S.M. iii. p. 181. Fl. Dan. t. 1975, f. 1. Berk. Ann. N.H. no. 389.

On decayed wood. Wothorpe, Norths. [United States]

1175. Arcyria ochroleuca. Fr. "Ochrey Arcyria."

Scattered; peridia substipitate, globose, yellow; capillitium ovate, erect, pallid-ochraceous, as well as the spores.—Fr. S.M.

iii. p. 181. *Sturm. t. 8. Berk. Ann. N.H. no. 115. Wig. Ann. Sc. Nat.* (1862) xvi. t. 16, f. 16. *Bisch. f.* 3692.

On decayed wood. Collyweston, Norths. [Mid. Carolina.]

Gen. 91.

OPHIOTHECA, Curr.

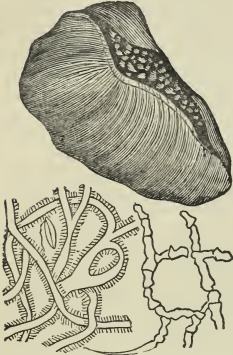


Fig. 137.

Peridium simple, bursting longitudinally. Capillitium twofold, one consisting of delicate hyaline threads, to which the spores are attached; the other of echinulate, thicker, branched filaments.—*Curr. Quart. Journ. Micr. ii. p. 240. Berk. Outl. p. 310.* (*Fig. 137.*)

1176. Ophiotheca chrysosperma.
Curr. "Currey's Ophiotheca."

Peridium irregular, more or less serpentine, brownish. Fertile threads delicate transparent, barren threads somewhat reticulated, minutely denticulate, here and there swollen; spores yellow, elliptic, pointed at each end.—*Curr. Micr. Journ.* (1854), ii. p. 240, t. ix. f. 1-5, vol. v. p. 131.

On inner bark of a dead tree.

(*Fig. 137.*)

Gen. 92.

TRICHIA, Hall.

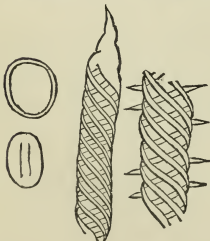


Fig. 138.

Peridium simple, persistent, membranaceous, bursting irregularly above. Threads spiral.—*Berk. Outl. p. 310. Eng. Fl. v. p. 319.* (*Fig. 138.*)

1177. Trichia rubiformis. P.
"Reddish Trichia."

Fasciculate, peridia turbinato-cylindrical, steel-blue; stems short, confluent, red-brown, capillitium and spores purplish-red.—*Fr. S.M. iii. p. 183. Hall. t. 48, f. 5. Batsch. f. 172. Bull. t. 502, f. 1? Pers. Disp. t. 4, f. 3, t. 1. f. 3. Nees, f. 112. Fl. Dan. t. 1365, f. 2. Chev. t. 9, f. 24. Fckl. exs. no. 1438. Wig. Ann. Sc. Nat.*

(1862), xvi. t. 15, f. 12. *Curr. Micr. Journ.* iii. t. 2, f. 5, 6. *Trichia Neesiana*. Corda. f. 288. *Ann. N.H.* no. 218. *Bisch.* f. 3664.

On dead wood. Apethorpe. [United States.]

Most usually fasciculate, individuals sometimes solitary. Stems often very short, rubiginous, when confluent unequally sulcate, attenuated upwards. Peridia of a beautiful steel-blue, reddish, bay, &c., shining, nearly cylindrical, apex obovate, very obtuse, somewhat circumscissile, even, rugulose below. Capillitium elongated, echinulate, bright purplish-red, as well as the spores.

1178. *Trichia pyriformis*. Hoffm. "Pear-shaped Trichia."

Subfasciculate, peridia turbinato-pyriform, blackish-red, stems subelongated, tawny, capillitium saffron-tawny, as well as the spores.—*Fr. S. M.* iii. p. 184. *Hoffm. Cr. t.* 1, f. 1. *Eng. Fl.* v. p. 319. *Pers. Ic. Pict.* t. 12, f. 1, 2. *Curr. Micr. Journ.* iii. t. 2, f. 9, 10. *Sphaerocarpus fragilis*. Sow. t. 279. *Purt. t.* 24, f. 3. *Wig. Ann. Sc. Nat.* (1862), xvi. t. 14, f. 12, 13. *Kl. exs.* no. 1026, 1632. *Fckl. exs.* no. 1437.

On rotten stumps. [United States.]

Stems racemoso-connate, often elongated, sometimes short, occasionally scattered and simple, with a membranaceous hypothallus. Peridia usually even, blackish-red, then bay-colour, sometimes with a ruddy tinge, opaque, oblong by mutual pressure, but in solitary individuals rounded. Threads very long, slender, echinulate.

1179. *Trichia Ayresii*. B. & Br. "Ayres' Trichia."

Crowded; peridia obovate, tawny-chestnut, shining; stems very short, connate; capillitium strongly echinulate, tawny saffron-yellow, as well as the spores.—*B. & Br. Ann. N.H.* no. 390.

On decayed wood. Oxfordshire.

Forming crowded masses. Peridia obovate, shining, of a bright tawny chestnut. Elaters of the capillitium thicker than in *T. pyriformis*, and strongly echinulate, tawny; spores globose, tawny.

1180. *Trichia Lorinseriana*. Ca. "Ribbed Trichia."

Subsolitary, stem long, dirty brown colour, flexuous, longitudinally ribbed with acute angular ridges, peridium turbinate or ovate, even above, smooth, pallid, irregularly ruptured in an operculate manner. Threads yellow, short, smooth; spores tetrahedral, yellow, diaphanous.—*Corda. Icon.* i. f. 288d. *Currey. Quart. Jour. Micr.* v. p. 129.

On wood. Jan. Weybridge.

Distinguished by the acutely fluted, long flexuous stem. "Spiral threads simple and detached, short, very pale yellow, with very delicate markings, each extremity of the thread tapering gradually to a very long thin point, the spiral markings not extending into the narrow extremities of the threads."—*Curr.*

1181. Trichia serotina. Schrad. "Late Trichia."

Scattered; peridium obovate, bay; stem brown, even; capillitium and spores yellowish.—*Fr. S.M.* iii. p. 184. *Eng. Fl.* v. p. 310. *Schrad. Jour.* 1779, t. 3, f. 2. *Fl. Dan.* t. 1680, f. 2. *Fckl. exs.* no. 1436.

On rotten wood. Appin. Bristol. [United States.]

1182. Trichia fallax. P. "Irregular Trichia."

Gregarious, peridia turbinate, at first vermilion-red, then clay-colour, plaited below as well as the stem, capillitium dusky-ochre, as also are the spores.—*Fr. S.M.* iii. p. 185. *Eng. Fl.* v. p. 319. *Schmid. Ic.* t. 33, f. 1. *Bull. t.* 417, f. 2. *Pers. Obs.* i. t. 3, f. 4, 5. *Nees. f.* 113. *Fl. Dan.* t. 467, f. 2, t. 2088, f. 3. *Jacq. Aust. t.* 299. *Wig. Ann. Sc. Nat.* (1862), xvi. t. 14, f. 14, 15. *Bisch. f.* 3674. *Kl. exs.* no. 931. *Fckl. exs.* no. 1435.

On rotten wood. [United States.]

Peridium at first globose, when adult top-shaped, even above and thin, circumscissile, firm below and plicate, as well as the stem. Colour dark and dusky yellow, sometimes shining, sometimes opaque. Spores ovate. When young of a beautiful vermilion-red, which, when dried prematurely, it sometimes retains, though often assuming a black hue.

1183. Trichia clavata. P. "Clavate Trichia."

Gregarious; peridium obovate, yellow, shining, even; stem rugose, of the same colour, capillitium and spores ochraceous.—*Fr. S.M.* iii. p. 186. *Eng. Fl.* v. p. 320. *Sturm. t.* 25. *Moug. exs.* no. 284. *Wig. Ann. Sc. Nat.* (1862), xvi. t. 15, f. 1-3. *Fl. Dan.* t. 2089, f. 1. *Bisch. f.* 3668. *Fckl. exs.* no. 1434. *T. pyri-formis*, *Sow. t.* 400, f. 6.

On decayed wood. [United States.]

Stem constantly present, but variable, sometimes long and sometimes short, rugose, attenuated downwards, of the same colour as the peridium, or rufescent at the base. Peridium rather large, usually even, delibscing irregularly; the lower part, which has a shining, transparent, skinny appearance, remains when the capillitium and spores have vanished, and in this state resembles a *Craterium*.—"The threads form an extensive complicated capillitium, in which it is rarely, if ever, possible to trace a single thread from one extremity to the other, and their colour is darker than in *T. cerina*. The markings also are strongly defined."—*Curr.*

1184. Trichia cerina. *Ditm.* "Waxy Trichia."

Solitary, peridium egg-shaped, olivaceous wax-colour; stem elongated, dingy, spores globose, and as well as the threads of the colour of the peridium.—*Sturm. i. t. 25. Curr. Quart. Jour. Micr. v. p. 127. Trich. clavata* β . *olivaceus. Fr. S.M. iii. p. 186.*

On decayed wood. Sept. Near Swansea.

The threads are pale-coloured, and taper gradually to a very thin point at each extremity; the spiral markings are very delicate, and the threads themselves are simple, detached from one another, and of a definite and moderate length.—*Curr.*

** *Goniospora.*

1185. Trichia nigripes. *P.* "Black-stemmed Trichia."

Gregarious, peridia variable in form, even, yellowish, stem very short, blackish, capillitium and spores ochraceous-yellow.—*Fr. S.M. iii. p. 186. Bull. t. 417, f. 2. Pers. Ic. & Des. t. 14, f. 3. Fl. Dan. t. 1313, f. 2. Mich. t. 96, f. 4. Curr. Quart. Jour. Micr. v. p. 128—iii. t. 2, f. 4. Wig. Ann. Sc. Nat. xvi. t. 15, f. 5-6. Kl. exs. no. 1025. Fckl. exs. no. 1433.*

On rotten wood. Kent and Surrey. [United States.]

Threads rather short and obtusely pointed, smooth, slightly constricted between the spirals.

1186. Trichia turbinata. *With.* "Top-shaped Trichia."

Crowded; peridia obovate, sessile, even, ochraceous-tan colour, capillitium and spores ochre.—*Fr. S.M. iii. p. 187. Eng. Fl. v. p. 320. Hall. t. 48, f. 7. Fl. Dan. t. 1313, f. 1. Sow. t. 85. Kl. exs. no. 762. Wig. Ann. Sc. Nat. (1862) xvi. t. 15, f. 6. Clathrus turbinatus. Bolt. t. 94, f. 3.*

On rotten wood. Common. [United States.]

1187. Trichia chrysosperma. *D.C.* "Yellow-spored Trichia."

Crowded, peridia rounded, subsessile, cinnamon yellow, capillitium and spores ochraceous golden-yellow.—*Fr. S.M. iii. p. 187. Eng. Fl. v. p. 320. Batsch. f. 173. Bull. t. 417, f. 4. Trichia nitens. Grev. t. 281. Curr. Micr. Jour. iii. t. 2, f. 1-3. Wig. Ann. Sc. Nat. (1862), xvi. t. 15, f. 13-17, t. 16, f. 1-5. Fl. Dan. t. 2089. f. 2.*

On rotten wood. Common. [United States.]

Threads of a definite length, smooth, occasionally echinulate, terminating somewhat acutely.

Threads occasionally echinulate.—*Curr.* (Fig. 138.)

1188. *Trichia varia.* P. "Variable Trichia."

Scattered; peridia sessile, subrotund, or reniform, at length yellowish, capillitium and spores ochraceous.—*Fr. S.M.* iii. p. 183. *Eng. Fl.* v. p. 320. *Mich. t.* 95, f. 2. *Schæff. t.* 296. *Batsch. f.* 171. *Kl. exs. no.* 422. *Wig. Ann. Sc. Nat.* (1862) xvi. t. 15, f. 7-10. *Schnzl. t.* 14, f. 27-33. *Fckl. exs. no.* 1431.

On decayed wood. Appin. [United States.]

"Threads not distinguishable from those of *T. nigripes*, but I have sometimes found *T. varia* with echinulate threads."—*Curr.*

1189. *Trichia serpula.* P. "Reticulated Trichia."

Peridia creeping, vein-like, flexuous, and reticulated, yellow; capillitium and spores of the same colour.—*Fr. S.M.* iii. p. 188. *Eng. Fl.* v. p. 320. *Batsch. f.* 174. *Pers. Ic. & Des. t.* 12, f. 1. *Nees. f.* 111. *Curr. Micr. Jour.* iii. t. 2, f. 7-8. *Wig. Ann. Sc. Nat.* (1862) xvi. t. 16, f. 5.* *Fl. Dan. t.* 2089, f. 3. *Bisch. f.* 3622. *Trichia reticulata.* *Grev. t.* 266.

On rotten branches, leaves, &c. [United States.]

Peridium more or less bright yellow, sometimes bay, spores and flocci of a golden yellow, even more bright than in *T. chrysosperma*.—*Eng. Fl.*

Threads very long, sometimes branched, sparsely echinulate, obtusely pointed.

1190. *Trichia (?) flagellifer.* B. & Br. "Anomalous Trichia."

Globose, sessile, metallic; flocci flagelliferous at their tips; spores flesh-coloured.—*B. & Br. Ann. N.H.* (1866) no. 1143, t. 2, f. 4.

On spruce fir. Dec. Badminton.

Perfectly globose, but fixed only by a small portion of the surface, which slightly projects, smooth, bay, reflecting metallic tints like a *Physarum*; flocci divided above two or three times. Spores (0003—0004 in.) 0075—01 m.m. diameter. Perfectly distinct from every other *Trichia* by the colour of the spores and metallic coat, in addition to the flagelliform threads.—*B. & Br.*

This is certainly not a good *Trichia*, as the threads are attached to, and spring from, the inner surface of the peridium. It will more properly constitute the type of a distinct genus.

Gen. 93.

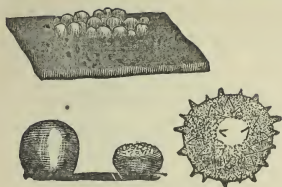
PERICHÆNA, Fr.

Fig. 139.

Peridium simple, submembranaceous, persistent, naked, often splitting horizontally in the middle. Flocci few, not spiral.—*Berk. Outl. p. 311. Eng. Fl. v. p. 321.*

(Fig. 139.)

1191. Perichæna abietina. Fr. "Fir wood Perichæna."

Peridia obovato-globose, bay black, more or less regularly splitting all round; flocci and spores yellow.—*Fr. S.M. iii. p. 191. Eng. Fl. v. p. 321. Sphærocarpus sessilis. Sow. t. 258.*

On fir wood.

There is an evident hypothallus, which is one of the peculiar characters of the species.—*M. J. B.*

1192. Perichæna populina. Fr. "Poplar Perichæna."

Peridia globose, depressed, yellow-brown, splitting all round, flocci and spores yellow.—*Fr. S.M. iii. p. 191. Eng. Fl. v. p. 321. Grev. t. 252. Desm. exs. no. 671. Bull. t. 417, f. 5. Pers. Obs. i. t. 6, f. 1-2. Berk. exs. no. 47.*

On fallen poplars.

[United States.]

Sometimes almost covering the tree.

(Fig. 139.)

Gen. 94.

LICEA, Schrad.

Fig. 140.

Peridium thin, membranaceous, even, bursting irregularly. Spores not mixed with the flocci.—*Berk. Outl. p. 311. Eng. Fl. v. p. 321.*

(Fig. 140.)

1193. Licea cylindrica. Fr. "Tubular Licea."

Equally effused, peridia linear, connate; spores earthy-feruginous.—*Fr. S.M. iii. p. 195. Eng. Fl. v. p. 391. Batsch. f. 175. Bull. t. 470, f. 3. Kl. exs. no. 349. Nees. f. 163. Reticularia multicapsula. Sow. t. 179. Trichia meteorica. Sow. t. 435.*

On rotten wood.

[Mid. & Up. Carolina.]

1194. *Licea fragiformis*. Fr. "Strawberry Licea."

Conglomerate ; peridia linear, subconnate ; spores umber.—
Fr. S.M. iii. p. 196. *Eng. Fl.* v. p. 321. *Bull. t.* 384. *Nees. f.* 102.
Gre v. t. 308. *Chev. t.* 9, f. 23.

On rotten wood, &c.

[United States.]

Very beautiful just before maturity, and resembling a strawberry.—
Eng. Fl. (Fig. 140.)

1195. *Licea applanata*. Berk. "Flattened Licea."

Depressed, conglomerated ; peridia very short, densely crowded, liver-brown ; spores large.—*Berk. Hook. Lond. Jour.* iv. p. 67. *B. & Br. Ann. N.H.* no. 393.

On dead twigs of currant, &c.

Forming little thin, flat, distinct, rounded, or elongated patches, which are at first scarlet, and then liver brown. Peridia short, densely crowded, invisible to the naked eye. Spores large, broadly elliptic, with one or more nuclei, argillaceous, tinged with red, mixed with a few flexuous threads, very much larger than in *L. fragiformis* or *L. cylindrica*.—*M. J. B.*

1196. *Licea perreptans*. Berk. "Creeping Licea."

Effused, at length here and there conglomerated ; peridia oblong, mostly distinct ; spores purplish-black.—*Berk. Gard. Chron.* (1848), p. 451. *Ann. N.H.* no. 392. *Lycoperdon echiniformis*. *Sow. t.* 400, f. 1.

In a cucumber frame heated with spent hops. Rolleston. Staffordshire.

Hypothallus white, creeping far and wide, and protruding here and there masses of oblong peridia, which are mostly distinct, assuming gradually a reddish-brown tint, and in cases of premature exsiccation becoming black. Spores very abundant, purple brown, mixed with a few flocci. Of extremely rapid growth, which is like that of *L. fragiformis* ; the spores, however, are quite different, and the mucilage never acquires the beautiful strawberry tint of that species.—*M. J. B.*

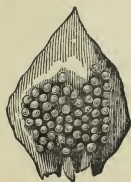
Gen. 95.**PHELONITIS, Chev.**

Fig. 141.

Peridium papyraceous, persistent, commonly splitting horizontally in the centre ; spores large, rough.—*Berk. Outl.* p. 311.

(Fig. 141.)

1197. Phelonitis strobilina. P. "Fir cone Phelonitis."

Aggregate, peridia rounded, red-brown, more or less circumscissile; spores dirty yellow, becoming pale.—*Perichæna strobilina*. *Fr. S.M.* iii. p. 190. *Eng. Fl.* v. p. 321. *A. & S.* t. 6, f. 5. *Sturm.* iii. t. 20. *Nees. f.* 101. *Chev. t.* 9, f. 22. *Grev. t.* 275. *Moug. exs. no.* 579. *Corda. Ic. v. f.* 30. *Berk. exs. no.* 292. *Fckl. exs. no.* 1469.

Between the scales of old cones of *Pinus Abies*. Appin.
(Fig. 141.)

Order XI. NIDULARIACEI. Tul.

Spores produced on sporophores compacted into one or more globose or disciform bodies, contained within a distinct peridium.—*Berk. Outl. p.* 311. *Tul. Ann. Sc. Nat.* 1844, i. p. 64.

Peridium cup-shaped, sporangia attached by a cord.

Of three membranes	:	:	:	:	:	:	<i>Cyathus.</i>
Uniform spongy	:	:	:	:	:	:	<i>Crucibulum.</i>

Peridium globose, simple. Sporangia involved in mucus	:	:	:	:	:	<i>Nidularia.</i>
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Peridium sub-hemispherical.

Double; sporangium single, ejected	:	:	:	:	<i>Sphaerobolus.</i>
Single; sporangium papillæform	:	:	:	:	<i>Thelebolus.</i>
Hyaline; sporangia large, grumous	:	:	:	:	<i>Polyangium.</i>

Gen. 96.

CYATHUS, Pers.



Fig. 142.

Peridium composed of three closely connected membranes, at length bursting at the apex, and closed by a white membrane. Sporangia plane, umbilicate, attached to the walls by an elastic cord.—*Berk. Outl. p.* 312. *Tul. Ann. Sc. Nat.* 1844, i. 65.
(Fig. 142.)

1198. Cyathus striatus. Hoffm. "Striate Cyathus."

Obconic, truncate, broadly open, externally ferruginous, hirtotomentose, internally lead-colour, smooth, striate; margin and corona thick, continuous; sporangia somewhat trigonous, whitish, broadly umbilicate; tunic above very thin, evanescent, be-

neath thicker and cottony, covered with a whitish meal; spores thick, oblong-elliptic.—*Tul. Ann. Sc. Nat.* 1844, i. p. 67, t. 3, t. 4, f. 1-3, t. 8, f. 1-12. *Hoffm. Cr. t.* 8, f. 3. *Nees. f.* 132. *Corda. Anl. t. D. f.* 42. *Nidularia striata. Holm. ii. t.* 2. *Sow. t.* 29. *Fr. S.M. ii. p.* 298. *Bull. t.* 40, f. A. t. 2, f. 3. *Peziza striata. Bolt. t.* 102, f. 2. *Schæff. t.* 178. *Gled. t.* 4. *Vaill. t.* 11, f. 4-5. *Mich. t.* 102, f. 2. *Bocc. t.* 301, f. 1. *Berk. Outl. t.* 2, f. 3. *Berk. exs. no.* 259. *Cooke. exs. no.* 311. *Fckl. exs. no.* 1247.

On sticks, fir cones, &c.

[United States.]

1199. Cyathus vernicosus D.C. "Waxy Cyathus."

Campanulate, base narrowly subsessile, above broadly open, undulato-repand, externally pale ochre or cinereous, silky tomentose, at length nearly smooth, internally lead-coloured or brown, corona inconspicuous; sporangia pale blackish, even; tunic rather thick, continuous, with a scanty, cinereous meal; funiculum white.—*Tul. Ann. Sc. Nat.* 1844, i. p. 81, t. 5, f. 14-23. *Corda. Anl. t. D. f.* 42. *Link. Obs. t.* 2, f. 53. *Berk. Outl. t.* 21, f. i. *Berk. exs. no.* 258. *Cooke exs. no.* 312. *Fckl. exs. no.* 1246. *Nees. f.* 133, B. *Nidularia campanulata. Sow. t.* 26. *Holms. ii. t.* 3. *Paul. t.* 187, f. 7-12. *Bull. t.* 488, f. 1. *Hoffm. Cr. t.* 8, f. 2. *Fl. Dan. t.* 780, f. 1, t. 469, upper fig. *Peziza lentifera. Bolt. t.* 102, f. 1. *Gled. t.* 4. *Mich. t.* 102, f. 1. *Vaill. t.* 11, f. 6-7. *Bocc. t.* 301, f. 1. *Batt. t.* 3, f. I.K.L.M.

On the ground, especially stubble fields. Common.

[United States.]

(Fig. 142.)

Gen. 97.

CRUCIBULUM, Tul.



Fig. 143.

Peridium consisting of a uniform, spongy, fibrous felt, closed by a flat furfuraeous cover of the same colour. Sporangia plane, attached by a long cord, springing from a little nipple-like tubercle.

—*Berk. Outl. p.* 312. *Tul. Ann. Sc. Nat.* 1844, i. p. 89.

(Fig. 143.)

**1200. *Crucibulum vulgare.* Tul. "Common
Crucibulum."**

Peridium tawny tan-colour, thick, externally nearly even, internally quite even, smooth, shining; mouth quite entire, naked; sporangia pale ochre, at length whitish; spores minute, ovate.—*Tul. Ann. Sc. Nat.* 1844, i. p. 90. *Ray. Syn.* 3rd ed. t. 1, f. 2, b. c. *Mich. t.* 102, f. 3. *Gled. t.* 4. *Schæff. t.* 179. *Fl. Dan. t.* 105. *Hoffm. Cr. t.* 8, f. 1. *Bull t.* 40, f. B. C. *Nidularia lævis.* *Bull t.* 488, f. 2. *Sow. t.* 30. *Holms. ii. t.* 1. *Cyathus crucibulum.* *Nees. f.* 133. *Grev. t.* 34. *Desm. exs. no.* 766. *Corda. Anl. t. D. f.* 42, (10-18). *Berk. Outl. t.* 2, f. 1. *Berk. exs. no.* 167. *Fckl. exs. no.* 1248.

On fern, sticks, &c.

[United States.]

(*Fig.* 143.)

Gen. 98.

NIDULARIA, Tul.



Fig. 144.

Peridium uniform, globose, of a simple membrane, at first closed, at length ruptured, or opening with a circular mouth; without a proper veil. Sporangia numerous, small, enveloped in mucus.—*Tul. Ann. Sc. Nat.* 1844, i. p. 92.

(*Fig.* 144.)

**1201. *Nidularia pisiformis.* Tul. "Pea-shaped
Nidularia."**

Gregarious, subglobose, sessile, rootless, hairy, brownish. Sporangia subrotund or discoid dark brown; sporidia colourless, globose, or elliptical.—*Tul. Ann. Sc. Nat.* 1844, i. p. 100. *B. & Br. Ann. N.H. no.* 1039. *Curr. Linn. Trans.* xxiv, t. 25, f. 4-6 & 21-22. *Rabh. F. E. no.* 1328. *Granularia pisiformis.* *Roth. Ust. Ann. b.* 1, s. 6, t. 1, f. 1.

On pine chips. Weybridge. May—Oct. 1862.

Peridium subrotund, slightly flattened, varying in different specimens from $\frac{1}{12}$ to $\frac{1}{4}$ in. across, brown or brownish white, woolly, tuberculate when ripe, from the pressure outwards of the sporangia; indehiscent, opening by

irregular fissures; sporangia enveloped in jelly, subrotund, or disc-shaped, their outline forming a broad ellipse (almost a circle) with a major axis of about $\frac{1}{20}$ of an inch, shining, of a rich dark brown colour, sometimes hollowed inwards on one side, but not umbilicate, and showing no trace of an elastic cord such as exists in *Cyathus*. Sporidia colourless, slightly varying in shape, globose, pear-shaped, or elliptical, produced on sterigmata, 0.0002-0.0003 in. across.—*F.C.* (Fig. 144.)

Gen. 99.

SPHÆROBOLUS, Tode.

Fig. 145.

Peridium double, the inner at length inverted elastically, and ejecting a solitary subglobose sporangium.—*Berk. Outl. p. 312. Eng. Fl. v. p. 231. (Fig. 145.)*

1202.

Sphærobolus stellatus. Tode. "Stellate Sphærobolus."

Globose, pale yellow; mouth regular, stellato-dentate.—*Berk. Outl. t. 21, f. 2. Eng. Fl. v. p. 231. Fckl. exs. no. 1245. Corda. Icon. v. f. 48. Bisch. f. 3643. Tul. Fung. Hyp. t. 21, f. 11. Rabh. F. E. no. 36.*

On sawdust, twigs, &c. Autumn. [United States.]

Plants at first connected by a web, at length smooth, subglobose, yellowish; outer peridium consisting of two substances, lined by the inner peridium, which is quite distinct and separated by some moisture, white, pellucid, and shining, at length both split together in a stellate manner, and the inner becomes suddenly inverted, while in general it still remains attached by the apices of the stellate margin, and the sporangium is shot forth to a considerable distance. Sporidia $\frac{1}{4000}$ in. long, elliptic or curved and irregular. The rays of the outer peridium are orange within.—*Eng Fl. (Fig. 145.)*

Gen. 100.

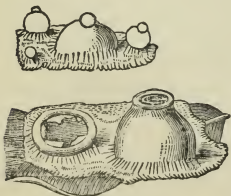
THELEBOLUS, Tode.

Fig. 146.

Peridium sessile, subrotund, urceolato-ventricose, mouth entire. Sporangium papillæform. Spores mucous.—*Fr. S.M. ii. p. 307. Eng. Fl. v. p. 230. (Fig. 146.)*

- 1203. Thelebolus terrestris.** *A. & S.* "Ground
Thelebolus."

Hemispherical, saffron-yellow, crowded, seated on a dense tomentose subiculum.—*A. & S. t. 2, f. 4. Nees. f. 364. Ann. N.H. no. 964. Fckl. exs. no. 643. Bisch. f. 3646. Kl. exs. ii. no. 718. Corda. Anl. t. D. f. 44, no. 9-11.*

On fir leaves. Richmond, Yorks.

(Fig. 146.)

[THELEBOLUS STERCOREUS. *Tode.* Was inserted in English Flora on the authority of Loudon, and has not since been confirmed.]

Gen. 101.

POLYANGIUM, Link.



Fig. 147.

Peridium subhemispherical, hyaline, sporangia large in proportion, grumous within.—*Berk. Outl. p. 312.*

(Fig. 147.)

- 1204. . Polyangium vitellinum.** *Ditm.* "Egg-yellow
Polyangium."

Minute, scattered ; sporangia lemon yellow, sporangioles egg-shaped, orange.—*Ditm. Sturm. t. 27. Link. Obs. t. 2, f. 65. Berk. Outl. p. 312. Corda. Anl. t. C. f. 40, no. 1-3. Bisch. f. 3628.*

On fallen trunks. Rare. King's Cliffe.

[United States.]

(Fig. 147.)

Family III. CONIOMYCETES

Spores either solitary or concatenate, produced on the tips of generally short threads, which are either naked, or contained in a perithecium, rarely compacted into a gelatinous mass.—*Berk. Outl. p. 313.*

This family is distinguished by the vast predominance of the reproductive bodies over the rest of the plant, if not in size, at least in abundance, and from the ease with which in general they fall from the point of attachment, in consequence of which, as the name implies, they have a dusty appearance, and often soil the fingers of those who handle them. In some cases there is a decided perithecium or peridium; in others there is no approach to such an organ, and in very nearly allied productions, it may be either present or entirely absent. Many of the genera are doubtless conditions of higher forms.—*See Berk. Introd. p. 315.*

A.—Growing on dead or dying plants.

Subcutaneous.

Perithecium more or less distinct . . . *Sphæronemei.*

Perithecium obsolete or wanting . . . *Melanconiei.*

Superficial.

Fructifying surface naked.

Spores compound or tomiparous . . . *Torulacei.*

B.—Parasitic on living plants.

Peridium distinctly cellular . . . *Æcidii.*

Peridium none.

Spores subglobose, simple, or deciduous . . . *Cœomacei.*

Spores mostly oblong, usually septate . . . *Puccinii.*

Order XII. SPHÆRONEMEI.

Perithecium more or less distinct, free, or erumpent; spores basal or parietal, simple, or septate, sometimes oozing out by the contraction of the perithecial walls.—*Berk. Introd. p. 330.*

The structure of a greater part of them is much the same; an obscurely developed perithecium, minute sporophores, and microscopic spores. It is quite certain that a large portion of the so-called species of *Phoma*, *Leptospora*, *Diplodia*, *Hendersonia*, *Cytispora*, *Septoria*, &c., are mere cases of dualism. All, indeed, are interesting, so far as ascertained dualism is concerned, or as far as there may be a prospect of showing that they are the spermatogonia or pycnidia of ascophorous species.—*M. J. B.*

A.—Spores oozing out in tendrils.

Perithecia delicate, simple.

Distinct.

Spores uniseptate or simple . . . *Ascochyta.* 455

Spores with a row of sporidiola . . . *Darluc.* 437

Seated on discoloured spots.

Spores ovoid or oblong . . . *Phyllosticta.* 452

429
Diplodia

- At length fissured.
 Spores more or less globose *Cheilaria*. 454
- Perithecia more or less incorporated.
 Spores oblong or thread-shaped *Septoria*. 441
- Perithecia compound, or irregular.
 Spores curved *Cytispora*. 462
- B.—Spores oozing out in a globule.
 Perithecia variable.
 Spores minute *Sphæronema*. 424
- C.—Spores not oozing out in globules or tendrils.
 Perithecia carbonaceous.
 With a papillate ostiolum.
 Spores minute *Aposphaeria*. 426
- Perforated.
 Spores simple *Sphæropsis*. 426
 Spores uniseptate *Diplodia*. 430
 Spores multiseptate *Hendersonia*. 434
 Spores fasciculate, fusiform *Prosthemia*. 459
- Fissured.
 Spores simple, obovate *Clinterium*. 429
- Cup-shaped, dimidiate *Rabenhorstia*. 461
- Cylindrical.
 Spores long, flexuous *Acrospermum*. 430
- Perithecia bristly.
 Mouthless, thin.
 Spores vermiculate *Vermicularia*. 438
- Excipuliform.
 Spores attenuated *Excipula*. 457
 Spores aristate *Dinemasporium*. 458
 Spores concatenate *Myzormia*. 459
- Perithecia membranaceous.
 Not flattened.
 Bursting irregularly.
 Spores simple *Coniothyrium*. 416
- Bursting longitudinally.
 Spores uniseptate on branched sporophores *Cystotricha*. 456
- Opening with a pore.
 Spores simple *Phoma*. 417
 Spores filiform appendiculate *Dilophospora*. 436
- Always covered.
 Spores fusiform *Cryptosporium*. 424
 Spores crested *Neottiospora*. 457
- More or less flattened.
 Breaking off at the base.
 Spores simple, minute *Leptostroma*. 416
 Spores cylindrical, oblong *Leptothyrium*. 423
 Spores septate, aristate *Discosia*. 439
- Opening irregularly.
 Spores curved *Pilidium*. 439
- Gaping and innate.
 Spores simple, linear *Micropera*. 462
- Irregular and wrinkled.
 Spores minute *Melasmia*. 440
 Spores large, obovate *Piggotia*. 440
- More or less radiating.
 Spores simple, fusiform *Actinothyrium*. 423

- Attached to creeping threads.
 Spores simple or uniseptate . . . *Asteroma*. 460
Perithecia spurious.
 Simple, never deficient above.
 Spores elongated *Phlyctæna*. 464.
 Sometimes excipuliform.
 Spores elongated *Discella*. 462
 Multicellular.
 Spores minute *Ceuthospora*. 464
 Spores quaternate, filiform *Eriospora*. 468

Gen. 102.

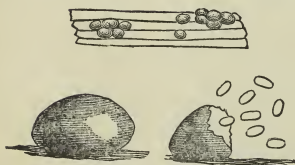
CONIOTHYRIUM, Corda.

Fig. 148.

Perithecium membranaceous, bursting irregularly or transversely; spores simple, at length free.—*Berk. Outl.* p. 313. (Fig. 148.)

1205. Coniothyrium glomeratum. Corda. "Clustered Coniothyrium."

Tufts minute, black. Perithecia in heaps, convex, rugulose, brown; spores oblong, rounded at the extremities, colourless, hyaline.—*Corda. iv. f.* 108. *B. & Br. Ann. N.H.* no. 752.

On elm planks. Nov.

(Fig. 148.)

Gen. 103.

LEPTOSTROMA, Fr.

Fig. 149.

Perithecium membranaceous, flat, breaking off at the base; spores simple, minute.—*Berk. Outl.* p. 313. *Fr. S.M.* ii. p. 597. (Fig. 149.)

1206. Leptostroma caricinum. Fr. "Sedge Leptostroma."

Subrotund, unequal, thin, opaque, entirely falling off, and leaving a brown spot.—*Fr. Obs.* ii. t. 7, f. 4. *S.M.* ii. p. 598. *Eng. Fl.* v. p. 297. *Fckl. exs.* no. 186. *Kl. exs.* no. 383.

On leaves of *Carices*.

[United States.]

The perithecium is extremely thin, and it leaves, when fallen off, a pale brown spot, surrounded by a little raised line. Other less perfectly defined spots, but of the same size, accompany the perfect plant, which are either old worn individuals, or an imperfectly developed state; occasionally in the centre of these there is a white spot.—*M. J. B.* (Fig. 149.)

LEPTOSTROMA JUNCINUM, Fr. (*Berk. exs. no. 197*) is undoubtedly the stysporous condition of *Dothidea junci*.

LEPTOSTROMA FILICINUM, Fr. (*Cooke exs. no. 334*) is an incomplete condition of *Dothidea filicina* Fr.

LEPTOSTROMA VULGARE, Fr. is an imperfect state of *Hysterium commune*,
Fr.

1207. **Leptostroma litigiosum.** *Desm.* "Minute fern
 Leptostroma."

Perithecia somewhat rounded, very minute, punctiform, scattered or clustered together, brown-black, sub-opaque, at length wholly seceding.—*Desm. Ann. Sc. Nat.* 1843, xix. p. 338. *Moug. exs. no.* 673. *Cooke exs. no.* 335.

On dead *Pteris aquilina*. [Low & Mid. Carolina.]

Much smaller than *L. filicinum*. Probably a condition of some ascigerous fungus.

1208. **Leptostroma spireæ.** Fr. "Meadow-sweet Leptos-
 troma."

Conglomerate, connate, irregular, rugose, shining grey within, at length separating entirely at the base.—*Eng. Fl.* v. p. 298. *Cooke exs.* no. 333. *Berk. exs.* no. 46.

On dead stems of *Spiræa ulmaria*. Spring. Common.
[Low. Carolina.]

Gen. 104. **PHOMA**, Fr.



Fig. 150.

Perithecium punctiform or subglobose, often spurious, or incorporated with the matrix, discharging the minute simple spores by a small orifice at the apex. Spores mostly hyaline.—*Berk. Outl. p. 314. (Fig. 150.)*

Probably none of the species are autonomous, but they must be retained under this genus until satisfactorily referred to the higher forms to which they respectively belong.

Sect. 1. Chlorosporæ—spores slightly coloured.

1209. Phoma concentricum. *Desm.* "Concentric Phoma."

Spots rounded, whitish, surrounded by a brown band, pseudo-perithecia numerous, concentrical, black, opaque; spores copious, very minute, subglobose.—*Desm. Ann. S.N. xiii. p. 189. Berk. Ann. N.H. no. 197. Depazea Agaves, Mont. Ann. Sc. Nat. i. p. 344.*

Common on leaves of *Yucca*. [Low. Carolina.]

Having the appearance of a *Phyllosticta* or *Depazea*. Spores ($\cdot 005$ m.m.) $\cdot 00019$ in.

1210. Phoma hederæ. *Desm.* "Ivy Phoma."

Covered, black; spores hyaline, subglobose.—*Desm. exs. no. 350. Eng. Fl. v. p. 284. Berk. exs. no. 90. Fr. El. ii. p. 119. Sphæropsis Hederæ. Lev. Ann. Sc. Nat. 1846. v. p. 296.*

On small dead shoots of ivy.

Covered with the blackened epidermis, which is pierced with a ragged, round, or linear orifice. Spores blackish, not truly globose.—*M. J. B.*

Sect. 2. Hyalosporæ—spores hyaline.

1211. Phoma asteriscus. *Berk.* "Starry Phoma."

Unilocular, convex, pitch-brown, margin nebulous, spores oblong, sub-elliptic.—*B. & Br. Ann. N.H. no. 394.*

On dead stems of *Heracleum*. Nov.

Forming little pitch-brown, rather convex dots, with a paler cloudy narrow border. Mass of spores surrounded by a dark cellular stratum, consisting of hexagonal cells, confused with the matrix, but scarcely presenting a definite perithecium. Spores narrow-oblong, sub-elliptic, but by no means filiform.—*B. & Br.*

1212. Phoma nothum. *Berk.* "Bastard Phoma."

Perithecia spurious, here and there elevated below, spores obovate.—*B. & Br. Ann. N.H. no. 395.*

On dead plane twigs. Feb.

Pustules slightly raised; perithecia spurious, orbicular, the base protruding here and there into their cavity. Spores obovate, rather pointed at the narrow extremity.—*B. & Br.*

1213. Phoma lingam. *Desm.* "Cabbage Phoma."

Gregarious; perithecia irregular, convex, soon depressed and concave, rugose, black. Spores small, oblong, with a sporule at each extremity.—*Desm. Ann. Sc. Nat. (1849), xi. p. 281. Desm.*

exs. no. 1877. *B. & Br. Ann. N.H. no.* 395.* *Sphæria lingam*,
Tode. f. 46. *Fr. S.M. ii. p.* 507.

On old cabbage stalks.

Spores about ($\cdot 005$ m.m.) $\cdot 00019$ in.

1214. Phoma radula. *B. & Br.* "Rasp-like Phoma."

Perithecia delicate, broadly conical; spores oblong-elliptic.
—*B. & Br. Ann. N.H. no.* 396.

On dead twigs of plane. Feb.

Sprinkled over the twigs, which renders it rough, like a little rasp or grater; epidermis split on each perithecium; perithecia delicate, composed of sub-hexagonal cells; spores minute, oblong-elliptic, with a sporule at either extremity, rarely an additional sporule in the centre.—*B. & Br.*

1215. Phoma depressum. *B. & Br.* "Depressed Phoma."

Perithecia spurious, much depressed above, stroma slightly thickened, olivaceous; spores oblong-elliptic.—*B. & Br. Ann. N.H. no.* 397. *Cooke exs. no.* 337.

On twigs of elm and *Robinia pseud-acacia*. Feb.

Scattered, forming little pustules pierced by the orifice; perithecia much depressed, spurious, covered by an olive-coloured stroma. Spores minute, oblong-elliptic, rather pointed at either extremity, towards which there is a sporule. Sometimes there is more than a single cell.—*B. & Br.*

1216. Phoma eriophorum. *B. & Br.* "Cottony Phoma."

Perithecia globose, free, at first pallid, at length blackish, tomentose below, springing from a similar mycelium.—*B. & Br. Ann. N. H. no.* 812.

On Spanish chestnuts.

Perithecia at first white, globose, clothed more or less with white or yellowish cottony down, like that of the mycelium from which they spring; at length dark, but when seen by transmitted light, reddish. Spores very abundant, white, slightly curved, $\cdot 00025$ in. ($\cdot 006$ m.m.) long.—*B. & Br.*

1217. Phoma samarorum. *Desm.* "Ash-key Phoma."

Forming black spots, closely covered by the cuticle; perithecia convex, black, pierced; spores minute, oblong-elliptic.—*Desm. exs. no.* 349, 1875. *B. & Br. Ann. N.H. no.* 398. *Cooke exs. no.* 160.

On Samari of ash. Jan. Common.

Forming conspicuous black spots; cuticle closely applied to the perithecia; perithecia convex, black, pierced in the centre; spores minute, oblong-elliptic, with a sporule towards either extremity.—*B. & Br.*

1218. Phoma piceum. *B. & Br.* "Pitchy Phoma."

Hypophyllous; perithecia spurious, pitch-brown, convex, closely connected with the epidermis; spores oblong-elliptic.—*B. & Br. Ann. N.H. no. 399.*

On the under surface of dead rose leaves. Feb.

Scattered, pustules conspicuous, convex, pitch-brown; cuticle closely connected with the spurious perithecia; spores pure white, minute, oblong-elliptic, with a sporule at either extremity.—*B. & Br.*

1219. Phoma sticticum. *B. & Br.* "Pied Phoma."

Scattered; very minute; covered by the cuticle, which at length splits longitudinally; spores oblong-elliptic, with a sporule at either extremity.—*B. & Br. Ann. N.H. no. 400.*

On dead twigs of box. Feb.

1220. Phoma exiguum. *Desm.* "Little Phoma."

Perithecia numerous, scattered or approximate, small, rounded or ovate, opening with a pore, covered by the cuticle, brownish when moist, blackish when dry, and rather shining. Spores numerous, ovoid, very minute, hyaline.—*Desm. exs. no. 1869. B. & Br. Ann. N.H. no. 400.**

On shoots of elder, &c.

Spores about $\frac{1}{200}$ m.m. Very different from *Sporocadus exilis*, Corda, and *Hendersonia exilis*, Lev., to which some authors have referred it.

1221. Phoma devastatrix. *B. & Br.* "Destructive Phoma."

Perithecia very minute, punctiform, black, globose; spores oblong, 2-3 nucleate.—*B. & Br. Ann. N.H. no. 813.*

On Lobelias. Aug.

This minute species, all but invisible to the naked eye, was most destructive in gardens in 1856. The perithecia are globose, and perforated with a minute round aperture; the spores are oblong, hyaline, containing from 2 to 3 nuclei $\cdot0004\text{--}\cdot00033$ in. ($\cdot01\text{--}\cdot008$ m. m.) long.—*B. & Br.*

1222. Phoma microscopicum. *B. & Br.* "Microscopic Phoma."

Perithecia subglobose, scattered beneath the epidermis, which is blackened above the ostiola, spores oblong-elliptic.—*B. & Br. Ann. N.H. no. 401.*

On dead stems of *Potamogeton*.

Forming scattered, very minute dark brown dots on discoloured patches; beneath each dot is seated a distinct subglobose, smooth perithecium, with no visible mycelium, very slightly conical above, pierced with a round simple ostium. Spores oblong-elliptic, variable in size, having occasionally, but not constantly, a sporidiolum at either extremity.—*B. & Br.*

1223. Phoma nebulosum. Berk. "Cloudy Phoma."

Covered ; perithecia very minute, gregarious, forming interrupted, grey, cloud-like sub-longitudinal spots, ostiola rather prominent, acute.—*Berk. Outl. p. 314. Sphæria nebulosa, Pers. Syn. p. 31. Eng. Fl. v. p. 256. Nees. f. 341. Fr. S. M. ii. p. 430.*

On dead herbaceous stems. Common.

Easily known by its long grey patches, dotted with the ostiola.

1224. Phoma longissimum. Berk. "Very long Phoma."

Covered, black ; perithecia minute, running together into extremely long parallel rows, ostiola obsolete ; spores elliptical or slightly curved, with two nuclei.—*Berk. Outl. p. 314. Sphæria longissima, Pers. Syn. p. 31. Fr. S. M. ii. p. 431. Eng. Fl. v. p. 256. Curr. Linn. Trans. xxii. p. 285.*

On dead stems of *Umbelliferæ*, &c.

Known by the narrow, linear, black patches, extending from joint to joint.

1225. Phoma petiolorum. Rob. "Petiole Phoma."

Perithecia scattered, globose or ovate, black, covered by the epidermis, papillate, at length pierced with a terminal pore. Nucleus whitish. Sporidia minute, ovoid-oblong, with two nucleoli.—*Desm. Ann. des. Sc. Nat. 1847, viii. p. 16. West. & Wall. exs. n. 471. Cooke Seem. Journ. iv. f. 13.*

On petioles of *Robinia pseud-acacia*. Feb.

1226. Phoma glandicola. Lev. "Acorn Phoma."

Perithecia gregarious, erumpent, subglobose, smooth, black, surrounded by the lacerated epidermis. Ostiolum scarcely conspicuous. Spores minute, ovate, simple, pellucid.—*Lev. Ann. Sc. Nat. 1846, v. p. 281. Cooke Seem. Journ. Bot. iv. f. 14. Sporoneuma glandicola, Desm.*

On acorns which had lain some time on the ground.

[Low Carolina.]

Sect. 3. Lignicolæ. On bleached wood.

1227. Phoma inophilum. Berk. "Maple-plank Phoma."

Spots indeterminate, silky-shining ; perithecia oblong, spores oblong, very minute.—*Berk. Hook. Journ. 1853, p. 40, t. 3, f. 4. Ann. N. H. no. 735.*

On maple planks. Nov.

Forming shining patches, which contrast strongly with the rest of the surface; spores extremely minute, just distinguishable with a power of 250 diameters, '0006 in. ('0015 m.m.) long; oblong, with a sporule at either extremity.—*M.J.B.*

1228. *Phoma muciferum.* *Berk.* "Mucous Phoma."

Perithecia scattered, oblong; spores very minute, involved in mucus.—*Berk. Hook. Journ. p. 1853, p. 40, t. 3, f. 5. Ann. N.H. no. 736.*

On elm planks. Nov.

Spores discharged from the base when ruptured in a cirrhiform string, extremely minute, oblong, with a nucleus at either extremity. The mucous substance in which the spores are involved is so little soluble, that they are not dispersed as in other species.—*M.J.B.*

1229. *Phoma ulmicola.* *Berk.* "Elm-plank Phoma."

Spots brown; perithecia rather crowded; spores small, elliptic, hyaline.—*Berk. Hook. Journ. 1853, p. 40, t. 3, f. 3. Ann. N.H. no. 737.*

On elm planks. Nov.

Forming little oblong brown patches. Spores '0008 in. ('002 m.m.) long; nuclei obsolete.

1230. *Phoma epileucum.* *Berk.* "Bleached Fir Phoma."

Spots indeterminate; perithecia elongated; spores hyaline, rather large, oblong, without nuclei.—*Berk. Hook. Journ. 1853, p. 40, t. 3, f. 2. Ann. N.H. no. 738.*

On bleached pine planks. Dec.

Perithecia black, minute, elongated, following the direction of the fibres. Spores perfectly colourless, oblong, '00015 in. ('0038 m.m.) long, sometimes slightly broader at one extremity, without any definite nuclei.—*M.J.B.*

1231. *Phoma fibricola.* *Berk.* "Fibre-loving Phoma."

Spots indeterminate; perithecia minute, elongated; spores ovate and elliptic, greenish.—*Berk. Hook. Journ. 1853, p. 40, t. 3, f. 1. Ann. N.H. no. 739.*

On oak, ash, and elm. Nov.

Perithecia mostly scattered, but sometimes forming distinct groups, elongated, following the course of the fibres; spores ovate or sub-elliptic, larger than in most species '00023 in. ('006 m.m.) long, of a delicate olive green, without distinct nuclei.—*M.J.B.*

1232. *Phoma bicuspidatum.* *Berk.* "Two-pointed Phoma."

Spots indeterminate; perithecia elongated; spores large

apiculate at either end, hyaline, binucleate.—*Berk. Hook. Journ.* 1853, p. 40, t. 3, f. 6. *Ann. N.H.* no. 740.

On pine planks. Dec.

Perithecia elongated, black, minute, following the direction of the fibres, at first scattered, at length often confluent. Spores .0003 in. (.0076 m.m.) long, shortly fusiform, apiculate at either end, variable in size, and in the degree of acumination, hyaline, containing two sporules; seated on slender sporophores.—*M. J. B.*

Gen. 105. LEPTOTHYRIUM, Kunze.

Perithecium flat, irregular, at length breaking off at the base; spores cylindrical, oblong, or irregular.—*Berk. Outl.* p. 314.

The species in this genus are also doubtfully autonomous.

1233. Leptothyrium juglandis. Lib. "Walnut Leptothyrium."

Hypophyllous. Spots orbicular, greyish; perithecia flattened, minute, rugose, brown; nucleus grey; spores ellipsoid.—*Lib. exs.* no. 164. *B. & Br. Ann. N.H.* no. 402. *Cooke exs.* no. 152. *Fckl. exs.* no. 201. *Cooke, L. F.* no. 60.

On half dead walnut leaves. Autumn.

1234. Leptothyrium fragariæ. Lib. "Strawberry Leptothyrium."

Epiphyllous. Spots indeterminate, reddish; perithecia flattened, rugose, shining, black; nucleus grey; spores cylindrical with 4-5 sporules.—*Lib. exs.* no. 162. *Cooke exs.* no. 153. *Cooke, L. F.* no. 62.

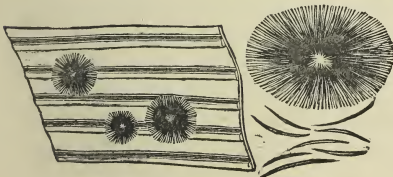
On strawberry and *Potentillæ*.

1235. Leptothyrium ribis. Lib. "Currant Leptothyrium."

Epiphyllous. Spots orbicular, minute, confluent, brown; perithecia flattened, red-brown; nucleus white; spores ovate, curved.—*Lib. exs.* no. 258. *Cooke exs.* no. 151. *Cooke, L. F.* no. 61.

On leaves of red currant. Autumn.

Gen. 106. ACTINOTHYRIUM, Kunze.



Perithecia orbicular, radiato-fibrous; spores fusiform, slender, simple.—*Berk. Outl.* p. 315. *Eng. Fl.* v. p. 296.

(Fig. 151.)

Fig. 151.

1236. Actinothyrium graminis. *Kze.* "Grass Actinothyrium."

Perithecia irregularly gregarious, orbicular, adnate, umbonate; margin radiating; spores slender, curved, fusiform.—*Kze. M.H. ii. t. 2, f. 3. Fr. S.M. ii. p. 597. Grev. t. 218. Moug. exs. no. 637. Eng. Fl. v. p. 296. Cooke exs. no. 338. Fckl. exs. no. 555. Bisch. f. 3581. Bail. t. 15. Pay. f. 369.*

On leaves and culms of grasses. Spring.

Forming little, round, very flat black spots, with a central umbo, of a close, radiating, fibrous structure. (*Fig. 151.*)

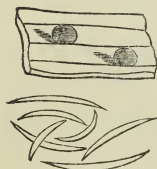
Gen. 107.**CRYPTOSPORIUM, Kunze.**

Fig. 152.

Perithecium always covered by the cuticle, carnosio-membranaceous, at length pierced; spores fusiform, simple.—*Berk. Outl. p. 315. (Fig. 152.)*

1237. Cryptosporium Caricis. *Corda.* "Sedge Cryptosporium."

Perithecia very minute, scarcely conspicuous, hypophyllous, crowded, rounded, brown; spores fusiform, straight or curved, hyaline, brown.—*Corda. Sturm. ii. t. 50. B. & Br. Ann. N.H. no. 403. Fr. S.M. iii. p. 482. Bisch. f. 3839. Berk. exs. no. 307.*

On leaves of different *Carices*. (*Fig. 152.*)

CRYPTOSPORIUM NEESII. *Corda.* has been proved to be a styloporous condition of *Valsa suffusa*, *Fr.*

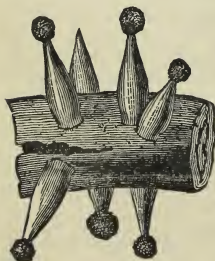
Gen. 108.**SPHÆRONEMA, Tode.**

Fig. 153.

Perithecia free, opaque, or hyaline; spores minute, at length oozing out by the ostiolum, and forming a globule.—*Berk. Outl. p. 315. Eng. Fl. v. p. 281. (Fig. 153.)*

1238. Sphæronema subulatum. *Tode.* "Awl-shaped Sphæronema."

Perithecia grumous, between conical and subulate, acute, yellowish; globule paler.—*Fr. Obs.* i. p. 187. *Fries. exs.* no. 325. *Grev. t.* 189. *Tode. f.* 117. *Eng. Fl.* v. p. 281. *Fckl. exs.* no. 773. *Bisch. f.* 3532. *Bail. t.* 14.

On hard blackened *Agarics*. [Mid. Carolina.]

At first sight resembling a *Stilbum*. Varies considerably in form, being sometimes almost linear. (*Fig.* 153.)

1239. Sphæronema vitreum. *Corda.* "Glassy Sphæronema."

Perithecia minute, transparent, pale yellow, more or less inflated below, with a long neck, fimbriate; spores oblong, obtuse, or subtruncate; globule pale yellow.—*Corda. i. f.* 297. *S. blepharistoma.* *Berk. Mag. Zool. & Bot.* no. 57, t. 15, f. 4, & no. 196. *Berk. exs.* no. 189.

On *Russula adusta*, *Lactarii*, nettles, &c.

Perithecia scarcely exceeding half a line in height, often much more minute, varying greatly in form, but in general more or less inflated at the base, occasionally conico-subulate, often confluent, mostly furnished with a long, distinct, slender neck, the orifice of which is fringed with a single row of distinct filaments, which are the apices of those of which the perithecium is composed. Sporidia larger than in *S. subulatum*, flowing out and forming an elongated subpersistent pale yellow globule.—*B. & Br.*

1240. Sphæronema leucoconium. *B. & Br.* "White Sphæronema."

Gregarious; perithecia hyaline, plano-convex, depressed, rather irregular, seated on snow-white flocci; spores minute, elliptic.—*B. & Br. Ann. N.H.* no. 405.

On decaying roots of beet. Nov. King's Cliffe.

Forming a thin stratum, consisting of minute, depressed, sub-hemispherical, or irregular white perithecia, simply pierced with a minute pore, and seated on branched white threads, of which a few spring from the sides. There is no papillæform or elongated ostiolum, but the convex perithecium is merely pierced in the centre.—*B. & Br.*

1241. Sphæronema epimyces. *Berk.* "Parasitic Sphæronema."

Gregarious, immersed in purplish spots, perithecia globose, papillate, black; nucleus white; spores —?—*Berk. Outl.* p. 315. *Sphæria epimyces.* *Fr. S.M.* ii. p. 499. *Berk. Ann. N.H.* no. 187.

On decayed *Corticium comedens*. Milton. Norths.

APOSPHÆRIA ACUTA. Berk. See *Sphæria coniformis*.—
Cooke exs. no. 223. [United States.]

APOSPHÆRIA COMPLANATA. Berk. See *Sphæria complanata*.
—Cooke exs. no. 224. [United States.]

Gen. 109.

SPHÆROPSIS, Lev.



Perithecia distinct, carbonaceous; spores various, simple, escaping by a perforation at the apex.—Berk. Outl. p. 316.

(Fig. 154.)

Fig. 154.

1242. Sphæropsis atrovirens. Lev. "Greenish-black
Sphæropsis."

Scattered, at first greenish, then blackish; perithecia somewhat immersed, globose and ovate, disc erumpent, rugulose, at length torn.—*Sphæria atro-virens*. A. & S. t. 2, f. 1. Kze. M.H. ii. t. 1, f. 2. Fr. S.M. ii. p. 501, in part. Eng. Fl. v. p. 272.

On dead misletoe twigs.

SPHÆROPSIS CANDOLLI, B. & Br. is a stylosporous condition of *Sphærella Buxi*. D.C.—Cooke exs. no. 159.

[Mid. Carolina.]

SPHÆROPSIS LEUCOSTIGMA, B. & Br. is a condition of *Sphærella Hederæ*.—Sow.

1243. Sphæropsis cylindrospora. Desm. "Straight-spored
Sphæropsis."

Amphigenous, black, shining, punctiform; perithecia very small, numerous, densely scattered, globose, covered by the epidermis, opening by a pore, then collapsing and concave; spores hyaline, straight, cylindrical, obtuse at both ends.—Desm. Ann. Sc. Nat. 1849, p. 277. B. & Br. Ann. N.H. no. 418. *Diplodia Desmazierii*. Gard. Fl. Forf. p. 298.

On ivy leaves and petioles. Spring.

Remarkable for the linear straight spores, exceeding their diameter in length 6-7 times. The spots are far smaller than in mature specimens of *S. leucostigma*.—B. & Br. Spores (.025 m.m.) .009 in. long.

1244. Sphæropsis Ralfsii. *B. & Br.* "Ralfs's Sphæropsis."

Perithecia scattered, punctiform, strongly collapsed; spores very minute, oblong.—*B. & Br. Ann. N.H. no. 419.*

On ivy leaves. Aberystwyth.

Scattered over the upper surface of the leaf, punctiform, black, strongly collapsed, and presenting the appearance of accurately defined excipula; spores oozing out, on the application of moisture, from a central pore, extremely minute, oblong.

1245. Sphæropsis parca. *B. & Br.* "Sparse Sphæropsis."

Perithecia minute, collapsed; spores oblong, 4-5 longer than their diameter.—*B. & Br. Ann. N.H. no. 420*.*

On leaves of *Abies excelsa*. Jan. Wiltshire.

Scattered sparingly on the leaves; perithecia collapsed when dry, so as not to rise at all above the surface, black; spores oblong, sub-cylindrical, obtuse at either end, but often suddenly attenuated at one extremity, 4-5 times longer than their diameter.—*B. & Br.*

1246. Sphæropsis strobil. *B. & Br.* "Fir-needle Sphæropsis."

Perithecia minute, collapsed; spores linear, 6-7 times longer than their diameter.—*B. & Br. Ann. N.H. no. 421.*

On leaves of *Pinus strobus*. Mar. Wilts.

Very like *S. parca*, but scarcely so much collapsed. It differs in the longer, narrower spores, which are never attenuated suddenly.—*B. & Br.*

1247. Sphæropsis geniculata. *B. & Br.* "Oblique-spored Sphæropsis."

Perithecia globose, ostiolum conical, prominent; spores curved, equal, obtuse, 4-5 times longer than their diameter, fixed at an obtuse angle.—*B. & Br. Ann. N.H. no. 421*.*

On leaves of *Pinus strobus*, with *S. strobil*.

Perithecia globose covered by the epidermis, which they pierce by means of their prominent conical ostiola; spores cylindrical, curved, obtuse at either end, fixed at an obtuse angle obliquely to long delicate sporophores, sometimes there is a nucleus at either extremity.—*B. & Br.*

1248. Sphæropsis epitricha. *B. & Br.* "Byssoïd Sphæropsis."

Perithecia globose, seated upon a furcato-ramose mycelium; spores oblong, three times longer than their diameter.—*B. & Br. Ann. N.H. no. 422.*

On dead stems of *Equisetum palustre*. Wilts.

Perithecia globose, seated beneath a discoloured cinereous spot, springing from forked septate threads, spores oblong, about three times longer than their diameter. The forked septate threads of the mycelium, with their obtuse apices, are very remarkable.—*B. & Br.*

1249. Sphæropsis mutica. *B. & Br.* "Smooth Sphæropsis."

Erumpent; perithecia globose, obtuse, more or less cæspitose, black, shining; spores very small, hyaline, elliptic, or obovate.—*B. & Br. Ann. N.H. no. 422**.

On small branches of elder. Batheaston.

This has exactly the habit of a *Diplodia*.

1250. Sphæropsis menispora. *B. & Br.* "Long-spored Sphæropsis."

Concealed entirely beneath the cuticle, except the round ostiole; perithecia ellipsoidal, black; spores very long, curved, acute at either end, containing many scattered, globose, pellucid nuclei.—*B. & Br. Ann. N.H. no. 425*.

On dead leaves of *Typha*. Spye Park, Wilts.

The nuclei are not arranged regularly in a single row, and therefore do not represent endochromes.

1251. Sphæropsis malorum. *Berk.* "Apple Sphæropsis."

Globose or subglobose, covered with the blackened cuticle; stroma blackish, ostiolar erumpent, more or less strongly papilliform; spores greenish, elliptical, margined, granular.—*Berk. Outl. p. 316. Sphæria malorum, Eng. Fl. v. p. 257. Diplodia? malorum. Curr. Linn. Trans. xxii. t. 49, f. 205.*

On apples lying on the ground. Winter.

Spores .0012 in. (.03 m. m.) long.

SPHÆROPSIS ARUNDINACEA, *Lev.* is evidently a condition of *Sphæria arundinacea*.—*Sow.*

1252. Sphæropsis taxi. *Berk.* "Yew-leaf Sphæropsis."

Gregarious, covered with the epidermis, which becomes grey; perithecia sub-immersed, convex, black, at length piercing the epidermis by a pore; spores —?—*Berk. Outl. p. 316. Sphæria Taxi, Eng. Fl. v. p. 272. Sow. t. 394, f. 6. Cryptosphæria Taxi. Grev. t. 13.*

On dead yew leaves.

1253. Sphæropsis alismatis. *Curr.* "Water Plantain Sphæropsis."

Perithecia subglobose, chestnut-coloured. Spores colourless, bordered, elliptical, subglobose or turbinate, with sometimes the apparent remains of a peduncle.—*Curr. Linn. Trans.* xxii. p. 334.

On *Alisma plantago*.

Spores .0004-.0005 in. (.01-.0125 m.m.) long.

Gen. 110. DOTHIORA, Fr.

Nucleus slowly developed, gelatinoso-grumous, black, immersed in an erumpent stroma, sub-carbonaceous externally, fleshy within, always astomous; spores pedicellate, obovate, simple.—*Berk. Outl.* p. 316.

1254. Dothiora pyrenophora. *Fr.* "Apple-twig Dothiora."

Erumpent, elliptic, plano-depressed, even, black, internally white.—*Dothidea pyrenophora, Fr. S.M.* ii. p. 552. *Berk. Ann. N.H.* no. 199. *Berk. exs.* no. 282.

On apple and pear twigs. [Low. Carolina.]

In my copy of Berkeley's *British Fungi*, No. 282, the spores are brown, uniseptate, and quite undistinguishable from those of a *Diplodia*.

1255. Dothiora sphæroides. *Fr.* "Ash-twig Dothiora."

Gregarious, subfasciculate, erumpent, irregularly angular, becoming plane, black, internally white.—*Dothidea sphæroides, Fr. S.M.* ii. p. 552. *Berk. Ann. N.H.* no. 198.

On ash twigs. Common.

Dr. Capron believes that he has traced this to a *Diplodia*, when mature.

Gen. 111. CLINTERIUM, Fr.

Perithecium erumpent, free, carbonaceous, bursting by fissures at the apex; nucleus gelatinoso-floccose; spores simple.—*Berk. Outl.* p. 316. *Fr. S.V.S.* p. 418.

1256. Clinterium obturatum. *Fr.* "Ling Clinterium."

Erumpent, nearly free, even, regular, black; rimoso-dehiscent, at length collapsed.—*Summ. V.S.* p. 418. *Berk. Outl.* p. 316. *Sphæria obturata. Fr. S.M.* ii. p. 495. *Fries. exs.* no. 128. *Eng. Fl.* v. p. 271.

On leaves of ling. Appin.

Gen. 112.

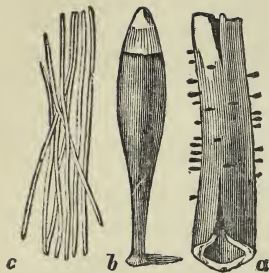
ACROSPERMUM, Tode.

Fig. 156.

Perithecia cylindrical, free; spores long, asciform, flexuous, erect.—*Berk. Outl. p. 317.*

(Fig. 156.)

1257. *AcrospERMUM compressum*. Tode. "Compressed AcrospERMUM."

Lanceolate or clavate, somewhat compressed, of an olivaceous black.—*Tode t. 2, f. 13. Fr. S.M. ii. p. 245. Berk. exs. no. 270. Grev. t. 182. Bisch. f. 3406. Eng. Fl. v. p. 221. Lib. exs. no. 32. Clav. herbarum. Pers. Com. t. 3, f. 4. Sow. t. 253. Moug. exs. no. 671. Clav. compressa. Purt. t. 19, f. 3. Fckl. exs. no. 776.*

On various dead herbaceous plants. [Low. Carolina.]

$\frac{1}{2}$ –2 lines high, at length concentrically grooved at the apex, when dry longitudinally sulcate and sometimes twisted.—*M. J. B. (Fig. 156.)*

1258. *AcrospERMUM graminum*. Lib. "Grass AcrospERMUM."

Scattered, minute, linear, blackish; perithecia cylindrical at the base, transversely undulated, annulate above, conical; spores very long, colourless.—*Lib. exs. no. 33. Corda. iii. f. 73. Berk. Ann. N.H. no. 164. Kl. exs. no. 1553. Fckl. exs. no. 777. Bail. t. 14.*

On dead grasses.

The contents of the perithecia, which consist of very long linear bodies, are at length discharged at the apex.

Gen. 113.

DIPLODIA, Fr.

Fig. 157

Perithecia distinct, carbonaceous; spores uniseptate, escaping by a perforation at the apex.—*Berk. Outl. p. 317. (Fig. 157.)*

1259. Diplodia mutila. Fr. "Poplar Diplodia."

Black, stroma innate, perithecia confluent, globose; superior portion prominent, unequal, rugose; ostiola simple.—*B. & Br. Ann. N.H. no. 407. De. Not. Act. Tur. 1845, vii. Dec. 4, f. 7. Sph. mutila. Fr. S.M. ii. p. 424.*

On dead poplar twigs.

1260. Diplodia confuens. B. & Br. "Confluent Diplodia."

Perithecia confluent, spots small, depressed, somewhat collapsed; ostiolum obsolete.—*B. & Br. Ann. N.H. no. 408. D. mutila Desm. exs. no. 1880.*

On twigs of *Daphne Laureola*. July. Milton. Norths.

Forming small, often confluent spots, surrounded by the free raised cuticle; perithecia irregular, confluent, depressed, somewhat collapsed, with no evident ostiolum; spores oblong. Forms far larger patches than in *D. mutila*.—*M. J. B.*

1261. Diplodia cæspitosa. B. & Br. "Cæspitose Diplodia."

Cæspitose, black; perithecia globose, ostiolum papillæform; spores oblong.—*B. & Br. Ann. N.H. no. 409.*

On twigs of ivy. King's Cliffe.

Bursting in little black tufts through the cuticle; perithecia globose, black; spores pale-yellow, hyaline, oblong, with a broad distinct border; endochrome simple, without any distinct nuclei.—*B. & Br.*

1262. Diplodia vulgaris. Lev. "Common Diplodia."

Perithecia globose, innate, gregarious, covered with the cracked epidermis; ostiola prominent; contents white; spores bilocular.—*Lev. Ann. Sc. Nat. May 1846, p. 291. B. & Br. Ann. N.H. no. 410. Cooke exs. no. 340.*

On twigs of various trees.

[United States.]

(Fig 157.)

1263. Diplodia herbarum. Lev. "Herbaceous Diplodia."

Caulicolous, erumpent, gregarious, perithecia oblong, convex, black, then irregularly depressed; spores oblong, uniseptate, contracted slightly at the septum, brown.—*Lev. Ann. Sc. Nat. (1846) v. p. 292. Sporocadus herbarum. Corda iii. f. 63. Cooke exs. no. 339.*

On stems of herbaceous plants. Common.

Sometimes scattered, commonly gregarious, often in lines beneath the cuticle, erumpent. Numerous species have already been described of this genus, which is doubtless but a condition of higher forms. The fruit differs so slightly in the species on different herbaceous stems, that we hesitate to characterise them as distinct.

1264. Diplodia ilicicola. *Desm.* "Holly-twig Diplodia."

Desm. Ann. Sc. Nat. 1838, x. p. 311. *Desm. exs. no.* 988. *Berk. Ann. N.H. no.* 206, t. 11, f. 7.

On dead holly twigs.

We have seen no published character of this species.

1265. Diplodia viticola. *Desm.* "Vine-twig Diplodia."

Desm. Ann. Sc. Nat. 1838, x. p. 311. *Desm. exs. no.* 989. *Berk. Ann. N.H. no.* 207. *Fckl. exs. no.* 541.

On vine branches. King's Cliffe. [Low. Carolina.]

We have met with no published character of this species.

1266. Diplodia paupercula. *B. & Br.* "Plane-twig Diplodia."

Perithecia at first covered, at length free, globose, with a prominent mouth; spores small, uniseptate.—*B. & Br. Ann. N.H. no.* 406*.

On dead twigs of plane. Batheaston.

Perithecia one or two together, at first concealed, at length exposed, globose, with a rather prominent orifice. Spores small, at first hyaline, elliptic or obovate, and falling off in that state, at length oblong, brownish, and uniseptate.—*B. & Br.*

1267. Diplodia æsculi. *Lev.* "Horse-chestnut Diplodia."

Perithecia innate, globose, black within, covered by the fissured epidermis. Sporidia elongated, opaque, brown and uniseptate.—*Ann. des Sc. Nat.* 1846, v. p. 290. *Fckl. exs. no.* 1563. *Cooke, Seem. Journ.* iv. p. 97.

On fallen twigs of *Æsculus Hippocastanum*. Feb.

1268. Diplodia Cowdellii. *B. & Br.* "Cotton Diplodia."

Perithecia free, globose, black, apices at length dehiscing; spores small, elliptic, uniseptate.—*B. & Br. Ann. N.H. no.* 406.

On damp cotton.

Forming dirty black spots on the matrix, but without any evident floccose stratum; perithecia globose, at length cracking above, black. Remarkable for its singular habitat and free mode of growth.—*B. & Br.*

1269. *Diplodia fibricola.* Berk. "Fibrous Diplodia."

Spots pallid or obsolete ; perithecia minute, elongated ; spores small, elliptic, somewhat constricted in the centre.—*Berk. in Hook. Journ.* 1853, p. 42, t. 3, f. 12. *Ann. N.H. no.* 741.

On Lombardy poplar. Nov. King's Cliffe.

Perithecia minute, more or less elongated, following the course of the fibres, rather delicate, easily lacerated, either scattered or disposed in distinct patches, sending off a few fibres from their base ; spores minute, '00025 in. ('006 m.m.) long, subelliptic, generally slightly constricted in the centre, pale yellow-brown, uniseptate, or very rarely acquiring a second septum.—*M. J. B.*

1270. *Diplodia oospora.* Berk. "Egg-spored Diplodia."

Spots olivaceous ; perithecia minute, elongated ; spores small, obovate, brown.—*Berk. Hook. Journ.* 1853, p. 42, t. 3, f. 11. *Ann. N.H. no.* 742.

On bleached willow. Nov. King's Cliffe.

Patches oblong, olive-brown from the fibres of the mycelium ; perithecia minute, elongated ; spores minute, obovate, yellow-brown, uniseptate, '0003 in. long, '00025 in. broad ('0076 × '006 m.m.), much darker than in *D. fibricola*.—*M. J. B.*

1271. *Diplodia tecta.* B. & Br. "Covered Diplodia."

Perithecia covered, gregarious, raising the epidermis, the cuticle covering the ostiola, blackened and shining ; spores large, oblong.—*B. & Br. Ann. N.H. no.* 411.

On dead leaves of cherry-laurel. Common.

The leaves are rough, with little elevated pustules disposed often in dry discoloured patches, marked in the centre with a shining blackspeck ; spores oblong, endochrome simple (?).—*B. & Br.*

1272. *Diplodia consors.* B. & Br. "Laurel Diplodia."

Perithecia gregarious, covered ; epidermis polished, becoming blackened, dehiscent in the centre, whitish ; spores small, oblong.—*B. & Br. Ann. N.H. no.* 412.

On leaves of cherry-laurel. Common.

Forming broad patches, perithecia covered, indicated by small shining black dots, which open in the centre by an irregular orifice, the edges of which are white ; spores only two-thirds the length of those of *D. tecta*, oblong-elliptic, uniseptate.—*B. & Br.*

1273. *Diplodia arbuticola.* Fr. "Uva-ursi Diplodia."

Gregarious, confluent, covered with the blackened epidermis ; perithecia irregular, black, astomous ; disc at length erumpent,

opaque.—*Berk. Outl. p. 317. Sow. t. 570, f. 6? Sphæria arbuticola, Fr. S.M. ii. p. 500. Berk. Ann. N.H. no. 189.*

On *Arbutus uva-ursi* leaves. Scotland.

1274. Diplodia ilicis. Curr. "Holly-leaf Diplodia."

Gregarious, black; perithecia globose, rather prominent, covered; at length erumpent, dehiscing by fissures; spores elliptical, oblong, sub-globose, or turbinate, irregular, with a yellowish green tinge.—*Curr. Linn. Trans. xxii. no. 343. Sphæria ilicis. Fr. S.M. ii. p. 501. Eng. Fl. v. p. 273.*

On holly leaves.

Gen. 114.

HENDERSONIA, Berk.



Fig. 158.

Perithecia distinct, spores 2-multiseptate, escaping by a terminal pore —*Berk. Outl. p. 317. Ann. N.H. no. 208.*

(Fig. 158.)

1275. Hendersonia elegans. Berk. "Elegant Hendersonia."

Seated on a dark brown spot; perithecia shining, gelatinous within, spores 6-8 septate.—*Berk. Ann. N.H. no. 208, t. 11, f. 9.*

On culms of reed. April. Tansor. Norths.

Forming little dark brown spots in the centre of which is seated a single shining perithecium, the upper part of which causes a little projection above the surface; perithecia lined with a gelatinous stratum, which gives rise to long, broadly fusiform, pedunculate, colourless spores, with 6-8 dissepiments; articulations sometimes swollen, often quite even, each of the central ones containing a single large globose nucleus, with occasionally a few granules.—*M. J. B.*

1276. Hendersonia macrospora. B. & Br. "Large-spored Hendersonia."

Perithecia entirely concealed, spores straight, narrowly lanceolate, 5-8 septate.—*B. & Br. Ann. N.H. no. 413.*

On dead twigs of *Philadelphus coronarius*. Oct. Apethorpe.

Entirely concealed by the cuticle, which is very slightly raised; perithecia globose.

1277. Hendersonia arcus. B. & Br. "Box-twig Hendersonia."

Perithecia becoming naked, globose; under the microscope steel-blue; spores arcuate, incrassated in the middle, 3-septate.—*B. & Br. Ann. N.H. no. 413**.

On box twigs. Batheaston.

Perithecia globose, at length naked, sub-gregarious, black, but when seen by transmitted light steel-blue. Sporophores branched; spores elongated, curved, swollen in the centre, attenuated at either extremity, hyaline, tri-septate. Closely resembling in form and colour *S. pulicaris*.—*B. & Br.*

1278. Hendersonia mutabilis. B. & Br. "Changeable Hendersonia."

Pustules depressed, elliptic, cellular within, spores oblong-elliptic, 3-4 septate; articulations here and there longitudinally divided.—*B. & Br. Ann. N.H. no. 414.*

On dead twigs of plane. Batheaston.

Pustules small, scarcely bursting the cuticle, elliptic, black, with a few central cells, besides the large cell or perithecium, which occupies the whole of the pustule; the central cells are developed later than the main cell, so that the spores in the former are simple or uniseptate, while in the larger cell they have acquired a much larger size, and have 3-4 transverse septa with the articulations here and there divided.—*B. & Br.*

1279. Hendersonia sarmentorum. West. "Vine Hendersonia."

Perithecia immersed, flattened, dark brown, concealed by the epidermis, which is at length lacerated above the poriform ostiole. Sporidia brown, pear-shaped, obovate, elliptical or irregular, tri-septate, with hyaline pedicels.—*West. Bull. de Brux. xviii. n. 60, fig. 2. Cooke Seem. Jour. f. 15.*

On dead twigs of vine. Feb. Highgate.

The sporidia are very variable in my specimens.

1280. Hendersonia corni. Fuckel. "Cornel Hendersonia."

Perithecia globose, at first covered by the epidermis, black; sporidia with long deciduous pedicels, oblong, sub-clavate, obtuse, four-celled, yellow, the cell next the stem hyaline.—*Fckl. exs. no. 524. Enum. Fung. Nassov. p. 50, no. 416, f. 16. Cooke Seem. Jour. iv. f. 16. S. (Hendersonia) Cornicola, D.C. Fr. S.M. ii. p. 530. Curr. Linn. Trans. xxii. t. 59, f. 146.*

On twigs of *Cornus*. Not uncommon. Feb.—May.

(Fig 158.)

1281. Hendersonia oreades. Dur. & Mont. "Oak-leaf Hendersonia."

Innate; perithecia small, globose, black, collected on pale spots, or disposed in a ring; spores shortly stipitate, ovoid, or

oblong, transversely 2-3 septate.—*Dur. & Mont. Fl. Alg. i. p. 571. Desm. exs. no. 1268. Berk. Outl. p. 318.*

On half dead oak leaves.

HENDERSONIA ROBINIÆ, *West*, referred to *Sphæria elongata*. Fr.

HENDERSONIA POLYCYSTIS, *B. & Br. Ann. N.H. no. 415. Rabh. F.E., no. 264*, is a condition of *Diatrype lanciformis*. Fr.

HENDERSONIA STROBILINA, *Curr (Cooke exs. no. 341)* is a condition of *Dichæna strobilina*. Fr.

1282. Hendersonia Stephensii. *B. & Br.* "Bracken Hendersonia."

Perithecia irregular, in a single row beneath the brownish cuticle, which ruptures in a line; spores large, ovate, reticulato-cellular.—*B. & Br. Ann. N.H. no. 502.*

On dead stems of *Pteris aquilina*. Bristol.

Perithecia membranaceous, oblong, irregular, arranged in a single row beneath the cuticle, which exhibits little lanceolate brown spots above them, with a fissure down the centre. Spores large, ovate, with about three transverse septa, each division being again traversed by several vertical and transverse, or sometimes oblique partitions. The perithecia and spores are very remarkable.—*B. & Br.*

1283. Hendersonia fibriseda. *Berk.* "Birch-plank Hendersonia."

Perithecia sub-globose, minute, very delicate, blackish blue; spores elongated, flexuous, obtuse at either end.—*Berk. Hook. Journ. 1853, p. 42. t. 3, f. 10. Ann. N.H. no. 743.*

On birch planks. Dec. King's Cliffe.

Perithecia punctiform, sub-globose, seated on definite white spots, following the direction of the fibres; very delicate, pale blackish blue, especially at the edge, which consists of interwoven fibres. Sporophores short, obtuse; spores '00015 in. long, '0002 broad ('037 × '005 m.m.) containing obscurely defined nuclei.—*M. J. B.*

Gen. 115.

DILOPHOSPORA, Desm.

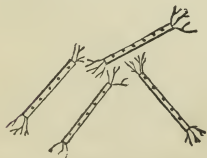


Fig. 159.

Perithecium rounded, closed, perforated; spores cylindrical, furnished at each end with radiating filiform appendages.—*Desm. Ann. Sc. Nat. (1840) xiv. p. 6.*

(Fig. 159.)

1284. Dilophospora graminis. *Desm.* "Grass Dilophospora."

Perithecia minute, covered with a blackened crust, seriate, subconnate, globose, immersed in a whitish stroma, ostiola punctiform, black, disc white; spores straight, with 2-3 filiform appendages at each end.—*Gard. Chron.* (1862.) *Pay. f.* 256. *B. & Br. Ann. N.H.* no. 1040. *Desm. exs.* no. 1091. *Ann. Sc. Nat.* (1840) xiv. t. 1, f. 2. *Fckl. exs.* 558.

On sheaths and spike of *Alopecurus agrestis*.

The two or three glumes at the base are tolerably perfect, while the top looks as if it had been pinched up into a point when young, and afterwards charred. The outer coat is black and glossy, studded here and there with minute punctures, surrounded like a little eyelet hole, with a white border, which leads down to a subglobose cell, the walls of which are clothed with a white or greyish gelatinous mass of spores.—*M. J. B.*

(*Fig. 159, spores magnified.*)

Gen. 116.**DARLUCA, Cast.**

Perithecia delicate; spores containing a row of sporidia, oozing out and forming a tendril.—*Berk. Outl. p.* 318. (*Fig. 160.*)

Fig. 160.

1285. Darluca filum. *Cast.* "Parasitic Darluca."

Gregarious, very minute. Perithecia globose, black, shining, pierced; spores hyaline, oblong, straight, containing four minute sporidioles.—*Berk. Outl. p.* 318. *Hendersonia uredinæcola, Desm. Ann. Sc. Nat.* 1849, xi. p. 345. *Sphæria filum, Fr. S.M.* ii. p. 547.

On various *Uredines*.

The spores are about '00055 in ('016 m.m.) long. *Fig. 160.*

1286. Darluca typhoidearum. *B. & Br.* "Club mace Darluca."

Scattered, immersed; perithecia minute, globose, blackish-brown; ostiola naked, papillate, pierced; spores oblong, straight, rather obtuse at the ends, sub-fusiform, with four globose sporidioles.—*Hendersonia typhoidearum, Desm. Ann. Sc. Nat. June, 1849. exs. no.* 1891. *B. & Br. Ann. N.H.* no. 417. *Rabh. F.E.* no. 45.

On leaves of *Typha* and *Sparganium*. Feb. (*Fig. 160.*)

1287. Darluca macropus. *B. & Br.* "Sedge Darluca."

Perithecia depressed, somewhat collapsed; spores pedicellate,

elongated, cylindrical, curved, with 3-6 sporidioles.—*Berk. Outl.* p. 318. *Hendersonia macropus*, *B. & Br. Ann. N.H.* no. 416.

On dead leaves of *Carices*. Jan. Wilts.

Perithecia entirely covered and pouring out their spores by a minute orifice, so as to make little black stains on the leaves; spores furnished with a long peduncle, cylindrical, but slightly attenuated at either end, many times longer than their diameter, somewhat curved.—*B. & Br.*

Gen. 117.

VERMICULARIA, Tode.

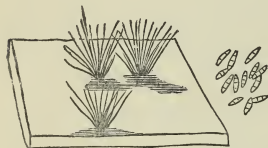


Fig. 161.

Perithecium thin, mouthless, generally bristly; spores vermiculate.—*Berk. Outl.* p. 318.

(*Fig.* 161.)

1288. *Vermicularia dematium.* Fr. "Clustered Vermicularia."

Gregarious, perithecia plano-depressed, mouthless, black, strigose in the centre, with somewhat divergent hairs of the same colour; spores long, curved.—*Berk. Outl.* p. 318. *Sphæria dematium*, *Eng. Fl.* v. p. 274. *Fr. S.M.* ii. p. 505. *Fckl exs.* no. 570.

On dead herbaceous stems.

[United States.]

At first covered by the epidermis, through which the hairs penetrate like a little brush, at length naked, the hairs frequently falling off.—*M. J. B.*

1289. *Vermicularia trichella.* Grev. "Ivy-leaf Vermicularia."

Scattered, perithecia ovate, very minute, mouthless, black, clothed at the top with very long divergent hairs.—*Grev. t.* 345. *Sphæria trichella*, *Fr. S.M.* ii. p. 515. *Eng. Fl.* v. p. 277. *Fckl. exs.* no. 569.

On dead ivy leaves.

Spores linear-oblong, septate.

(*Fig.* 161.)

1290. *Vermicularia atramentaria.* B. & Br. "Inky Vermicularia."

Effused, gregarious, maculæform; spores straight, short; endochrome retracted to either end.—*B. & Br. Ann. N.H.* no. 430.

On decayed stems of potatoes. Common.

Forming large ink-black velvety patches, crowded with minute perithecia, clothed with long straight subulate bristles, connected at the base by intricate fibres creeping beneath the cuticle of the matrix. Spores minute, linear, rather short. Distinguished at once by its straight spores.

1291. Vermicularia circinans. Berk. "Circinating Vermicularia."

Spots orbicular, perithecia concentric, seated on a hyaline, articulated, radiating mycelium. Spores oblong, slightly curved, attenuated.—*Berk. Gard. Chron.* 1851, p. 595, fig. 1857, p. 53, fig.

On Nocera onions.

In round black spots, consisting of multitudes of distinct, extremely minute subglobose perithecia, clothed with long rigid black hairs, and sending off in every direction from the base flexuous hyaline articulated, often branched or anastomosing threads. The spores are slightly curved and attenuated at either end, though the tip is very obtuse. The endochrome is either retracted to either end, leaving a free space in the centre, or the whole mass is broken up into several round bodies.—*M. J. B.*

Gen. 118.

DISCOSIA, Lib.

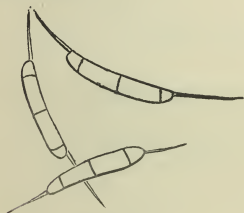


Fig. 162.

Perithecium flat, opening at the base; spores septate, obliquely aristate at either end.—*Berk. Outl.* p. 318. (Fig. 162.)

1292. Discosia alnea. Lib. "Leaf Discosia."

Gregarious, innate, orbicular, black, shining, at first convex, even, soon depressed round the dot-like ostiolum, at length collapsed and rugoso-plicate; spores triseptate, obliquely aristate at each extremity.—*Berk. Outl.* p. 318. *Sphæria artocreas*, *Tode.* ii. f. 72. *Fr. S.M.* ii. p. 523. *Eng. Fl.* v. p. 278. *Fckl. exs.* no. 452. *Kl. exs.* ii. no. 154. *Fries. t.* 8, f. 4-6. *De. Not. Act. Tur.* 1849, x. f. 2.

On dead leaves. Common. [United States.] (Fig. 162.)

Gen. 119.

PILIDIUM, Kunze.

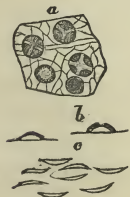


Fig. 163.

Perithecium scutellæform, smooth, shining, opening irregularly; spores curved, without appendages.—*Berk. Outl.* p. 318. (Fig. 163.)

1293. *Pilidium acerinum*. Kze. "Sycamore *Pilidium*."

Hypophyllous, hemispherical, black, splitting with from three to five acute teeth, nucleus white; spores fusiform.—*Kze. M.H. ii. p. 92, t. 2, f. 5. Fr. El. ii. p. 136.*

On dead sycamore leaves.

Externally resembling a *Phacidium*, but with different fruit. (*Fig. 163.*)

1294. *Pilidium* (?) *carbonaceum*. Lib. "Willow *Pilidium*."

Perithecia irregular, dingy-brown, crowded into broad patches, growing in a widely-effused more or less ambient subiculum; spores falciform, septate.—*B. & Br. Ann. N.H. no. 442. Cenangium fuliginosum, Fr. El. ii. p. 23. Eng. Fl. v. p. 212.*

On willow branches. King's Cliffe.

Not a good *Pilidium*.

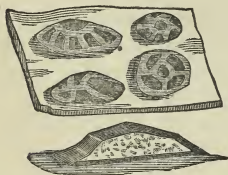
Gen. 120.**MELASMIA, Lev.**

Fig. 164.

Perithecium membranaceous, dehiscent above, rather swollen, at length depressed and rugose, growing in a thin, spot-like, effused receptacle; spores simple.—*Berk. Outl. p. 319. (Fig. 164.)*

1295. *Melasmia alnea*. Lev. "Alder *Melasmia*."

Perithecia adnate, scattered, membranaceous, hemispherical, even, black, at length flattened and rugulose; spores elliptic-elongated, obtuse, straight or curved.—*Ann. Sc. Nat. 1848, ix. p. 253. Grev. t. 146, f. 2. Fr. S.M. ii. p. 544.*

On living alder leaves.

This plant presents exactly the aspect of *Discosia alnea*, but differs in the spores. (*Fig. 164.*)

MELASMIA ACERINA, *Lev.* is a condition of *Rhytisma acerinum*.

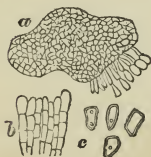
Gen. 121.**PIGGOTIA, B. & Br.**

Fig 165.

Perithecium irregular, very thin, obsolete below, forming by confluence a wrinkled mass, bursting by a lacerated fissure; spores rather large, obovate, at length tomiparous.—*Berk. Outl. p. 319. (Fig. 165.)*

1296. Piggotia astroidea. B. & Br. "Stellate Piggotia."

Epiphyllous, black, perithecia slightly prominent, connate, forming small irregularly stellato-aggregate tubercles; spores broadly ovate, sporophores short, tomiparous.—*B. & Br. Ann. N.H. no. 503, t. 5, f. 3. Dothidea astroidea, Eng. Fl. v. p. 287. Asteroma ulmi, Grev. Fl. Ed. p. 368.*

On green leaves of elm.

Jet black, forming irregular, roundish, granulated, or wrinkled patches on the upper surface of the leaf, sometimes seated on a yellow spot, but frequently without any discoloured border; perithecia sub-orbicular where solitary, but soon confluent, though not making a uniform stratum, obsolete below, thin and shining above, bursting irregularly by a jagged orifice; spores oozing from the ruptures, and forming roundish discs, which at first look like the hymenium of some *Peziza*, broadly ovate, slightly constricted towards the obtuse base; sporophores short, at length tomiparous.—*B. & Br. (Fig. 165.)*

Gen. 122.**SEPTORIA, Fries.**

Fig. 166.

Perithecia minute, more or less incorporated with the matrix; spores oblong and septate, or thread-shaped, and continuous, discharged in little tendrils.—*Berk. Outl. p. 319. (Fig. 166.)*

This is a very large and doubtful genus, but is retained here provisionally.

1297. Septoria ulmi. Kze. "Elm Septoria."

Spots brown, perithecia small, scattered; cirrhi dirty-white; spores nearly straight, subquadrisepate.—*Kunze M.H. ii. p. 107. Grev. t. 112. Eng. Fl. v. p. 356. Cooke. exs. no. 207. Fckl. exs. no. 506. Corda. Anl. t. F. f. 54, no. 10, 11. Berk. exs. no. 214. Cooke, L.F. no. 63.*

On elm leaves. Common.

[United States.]

(Fig. 166.)

1298. Septoria heraclei. Fckl. "Hog-weed Septoria."

Epiphyllous; spots none; perithecia somewhat solitary, innate, brown, pierced; tendrils white; spores long, fusiform.—*Fckl. exs. no. 515. Ascoxyta heraclei. Lib. exs. no. 51.*

On fading leaves of *Heracleum*.

The spores are large, and very profuse, lying in white patches upon the leaves after they are expelled from the perithecia. Allied closely to *S. ulmi*.

1299. Septoria oxyacanthæ. *Kze.* "Hawthorn Septoria."

Spots purple; tendrils yellow; spores very long, 8-12 septate, curved.—*Kunze M.H.* ii. p. 109. *Eng. Fl.* v. p. 356. *Cooke exs.* no. 201. *Fckl. exs.* no. 500. *Kl. exs.* no. 456.

On living hawthorn leaves. [United States.]

1300. Septoria aceris. *B. & Br.* "Sycamore Septoria."

Hypophyllous; spots small; perithecia innate, minute, brown; tendrils small, pallid; spores long, straight, very distinctly septate.—*B. & Br. Ann. N.H.* no. 432. *Fckl. exs.* no. 499. *Ascoxyta aceris.* *Lib. exs.* no. 54.

On living sycamore leaves. Autumn.

1301. Septoria salicella. *B. & Br.* "Willow Septoria."

Beneath the cuticle; epidermis above the subglobose perithecia elevated; spores fusiform, triseptate, tendrils reddish, irregular.—*B. & Br. Ann. N.H.* no. 746, t. 15, f. 7.

On branches of willows.

Concealed by the cuticle, which is obscurely pustulate, in consequence of the presence of the subglobose perithecia; spores ejected in the form of pale pink tendrils, fusiform, .00133 in. (.03 m.m.) long, triseptate.—*M. J. B.*

1302. Septoria ægopodii. *Desm.* "Gout-weed Septoria."

Epiphyllous; spots pale, perithecia globular, black, very visible on the under surface, spores long, curved.—*Desm. exs.* no. 616. *Eng. Fl.* v. p. 356. *Cooke exs.* no. 146.

On living leaves of *Ægopodium podagraria*.

1303. Septoria lepidii. *Desm.* "Crucifer Septoria."

Spots none; perithecia scattered or approximate, black, innate, slightly prominent, convex, at length pierced; tendrils white; spores elongated, linear, flexuous.—*Desm. Ann. Sc. Nat.* 1842, xvii. p. 110. *Desm. exs.* no. 1177. *B. & Br. Ann. N.H.* no. 431.

On *Lepidium Smithii*. Autumn.

After the spores are discharged, the mouths of the perithecia enlarge, and they collapse so as to have the appearance of a small black *Peziza*.

1304. Septoria nodorum. *Berk.* "Wheat-stalk Septoria."

Spots pale fawn-coloured, with a dark border, depressed, at length confluent; perithecia somewhat prominent; spores oblong,

elongated, slightly curved, or irregular.—*Berk. Gard. Chron.* 1845, p. 601. *B. & Br. Ann. N.H. no.* 433.

On the joints of wheat stalks, just before the wheat is ripe.

Forming little discoloured depressed spots on the knots of the stem, especially the upper one, soon spreading till they invest the whole knot, pale fawn-coloured, studded with a number of minute, somewhat raised perithecia, which are at first reddish, eventually black.—*M. J. B.*

**1305. *Septoria hippocastani.* *B. & Br.* "Horse chestnut
Septoria."**

Spots rufous; tendrils delicate; spores curved, flexuous, linear, simple.—*B. & Br. Ann. N.H. no.* 434. *Cooke exs. no.* 205.

On leaves of horse chestnut. Common.

Spots at first minute and scattered, then becoming confluent, and forming broad rufous patches; cirrhi delicate, pale; spores long, linear, simple, curved, flexuous.—*B. & Br.*

1306. *Septoria lituus.* *B. & Br.* "Twig Septoria."

Concealed by the cuticle, which is raised into minute pustules; perithecia depressed; spores filiform, curved at the apex, a little longer than the sporophores.—*B. & Br. Ann. N.H. no.* 744, t. 15, f. 5.

On smooth twigs.

Spores '0015 in. ('037 m.m.) long.

1307. *Septoria Ralfsii.* *B. & Br.* "Apple Septoria."

Sub-cutaneous; epidermis above the perithecia elevated, centre of the pustules white; spores straight, multi-nucleate.—*B. & Br. Ann. N.H. no.* 745, t. 15, f. 6.

On decayed apples.

Forming black irregular patches, dotted with minute pustules, the centre of which is white. Spores '00133 in. ('03 m.m.) long, with about six nuclei.

1308. *Septoria insularis.* *B. & Br.* "Ivy leaf Septoria."

Spots brown, distinct; epidermis above the perithecia elevated, centre of the pustules white; spores filiform, slightly curved.—*B. & Br. Ann. N.H. no.* 747, t. 15, f. 8.

On half dead ivy leaves.

Forming large definite umber-brown spots, which are rough from the presence of the concealed perithecia, with a white spot in the centre of each pustule; spores filiform, slightly curved '0015 in. ('038 m.m.) long.—*B. & Br.*

1309. Septoria Badhamia. *B. & Br.* "Vine-leaf Septoria."

Perithecia sub-conglomerate, brown; spores clavate, elongated, slightly thickened.—*Cooke exs. no. 206. B. & Br. Ann. N.H. no. 748, t. 15, f. 9.*

On vine leaves. Oct. Common.

Forming little brownish specks on either side of the leaf, consisting of a few sub-conglomerate perithecia; spores oblong, clavate .002 in. (.05 m.m.) long; endochrome sometimes retracted to one end, containing a few minute granules, very rarely there are one or two septa.—*B. & Br.*

1310. Septoria polygonorum. *Desm.* "Polygonum Septoria."

Epiphyllous; spots small, rounded, tawny, with a purplish border; perithecia innate, very minute, pale-brown, pierced, at length concave; spores linear, curved, with numerous sporules.—*Desm. Ann. Sc. Nat. 1842, xvii. p. 108. Desm. exs. no. 1171. B. & Br. Ann. N.H. no. 749.*

On living *Polygonum*. Autumn.

The spores are unequal in length, from (.025-.03 m.m.) .0009-.001 in.

1311. Septoria convolvuli. *Desm.* "Bindweed Septoria."

Epiphyllous; spots orbicular, then confluent and irregular, dingy brown or whitish; perithecia innate, minute, blackish-brown, pierced; spores elongated, linear, curved or straight.—*Desm. Ann. Sc. Nat. 1842, xvii. p. 108. Septoria convolvulicola, Ann. N.H. no. 195. S. fuscella, Berk. M.S. Cooke, exs. no. 127. Kl. exs. no. 1862. Cooke. L.F. no. 65.*

On living bindweed. Summer.

Spores .001-.0015 in. (.03-.04 m.m.) long.

1312. Septoria cornicola. *Desm.* "Dogwood Septoria."

Spots orbicular, greyish, circumscribed by a darker line; perithecia scattered, rounded, depressed in the centre.—*Desm. Ann. Sc. Nat.. Sphæria cornicola, Fr. S.M. ii. p. 530. Berk. Mag. Zool. & Bot. no. 54. Cooke exs. no. 136. Berk. exs. no. 185. Cooke L.F. no. 64.*

On leaves of dogwood. Common.

In Berkeley's "Outlines" this is said to be the *Hendersonia cornicola* of Currey, evidently by a slip of the pen, since the *Hendersonia* is found on the twigs, and is a very different thing (agreeing with Currey's description) from the *Septoria* on the leaves.

1313. Septoria heterochroa. *Desm.* "Varicoloured Septoria."

Spots scattered, small, rounded, greyish-brown, then white, with a brown border; perithecia few, brown, at length black, pierced, concave when dry; spores linear, slender, straight or curved.—*Ann. Sc. Nat.* 1847, viii. p. 22. *Sphæria* (*Depazea*) *vagans*, *Fr. S.M.* ii. p. 532. *Berk. Ann. N.H.* no. 105. *Berk. exs.* no. 188. *Cooke exs.* no. 140.

On leaves of *Lamium album*, Mallow, &c.

1314. Septoria stemmatea. *Berk.* "Cowberry Septoria."

Epiphyllous, gregarious; perithecia globose, minute, seated upon rounded bleached spots.—*Sphæria* (*Depazea*) *stemmaea*, *Fr. S.M.* ii. p. 528. *Berk. Ann. N.H.* no. 192.

On living leaves of *Vaccinium Vitis Idea*.

1315. Septoria graminum. *Desm.* "Grass Septoria."

Spots oblong, pallid, surrounded by a more or less distinct darker line; perithecia obscurely disposed in lines, immersed; spores linear, straight, or curved.—*Desm. Ann. Sc. Nat.* 1843, xix. p. 339. *Sphæria* (*Depazea*) *graminicola*, *Berk. exs.* no. 186. *Ann. N.H.* no. 103. *Cooke, exs.* no. 208.

On grass.

[Low. Carolina.]

The perithecia are so minute as scarcely to be visible to the naked eye.

1316. Septoria hederæ. *Desm.* "Ivy Septoria."

Spots dirty-white, surrounded by a broad brown border; perithecia gregarious, globose, naked, opaque, at length black; spores linear, slender, straight.—*Desm. exs.* no. 341. *Ann. Sc. Nat.* xix. p. 340. *Sphæria hederæcola*, *Fr. S.M.* ii. p. 528. *Eng. Fl.* v. p. 279. *Moug. exs.* no. 663. *Cooke. exs.* no. 126. *Fckl. exs.* no. 503.

On ivy. Common.

1317. Septoria populi. *Desm.* "Poplar Septoria."

Spots white, or greyish, with a brown border; perithecia hypophyllous, scattered, depressed, soon splitting all round; spores elongated, obtuse, curved, uniseptate.—*Desm. exs.* no. 1731. *Ann. Sc. Nat.* 1843. xix. pp. 345. *Sphæria frondicola*, *Fr. Obs.* ii. t. 5, f. 6, 7. *S.M.* ii. p. 529. *Eng. Fl.* v. p. 280. *Moug. exs.* no. 369. *Cooke exs.* no. 145. *Kl. exs.* no. 1958.

On poplar leaves. Autumn.

1318. Septoria thecicola. B. & Br. "Capsule Septoria."

Superficial, convex, collapsing, rugose; spores very delicate linear, straight.—*Berk. Intell. Obs.* 1863, p. 9, fig. 1. *Sphæropsis thecicola*, *Berk. Ann. N. H.* no. 424.

On thecæ of *Polytrichum piliferum*. Aberdeen.

Perithecia black, scattered, convex, at length collapsing, opening by a definite orifice; spores of various lengths.

1319. Septoria princeps. B. & Br. "Beech Septoria."

Perithecia large, depressed, papillate, covered by the epidermis; spores cylindrical, oblong, 5-6 septate, hyaline.—*B. & Br. Ann. N. H.* no. 940, t. 15, f. 11.

On beech sticks. Batheaston.

Spores .002 in. (.05. m.m.) long, cylindrical, oblong, with about seven or eight endochromes, hyaline, oozing out in an irregular mass.

1320. Septoria pyricola. Desm. "Pear-leaf Septoria."

Epiphyllous; spots greyish white, scattered, roundish or irregular; perithecia few, minute, rather prominent, black, pierced at the apex; tendrils whitish; sporidia elongated, curved, containing several nucleoli.—*Ann. Sc. Nat. ser.* 3, xiv. p. 115. *Cooke Seem. Journ.* iv. f. 27. *Depazea pyricola*, *Desm. exs. n.* 721. *Septoria pyri*, *Cast. Cat. Pl. de Mars*, p. 194. *Septoria dealbata*, *Lev. Ann. Sc. Nat. ser.* 3, ix. p. 249 (partly).

On leaves of apple and pear. Oct. Common.

1321. Septoria viburni. West. "Guelder-rose Septoria."

Epiphyllous; spots roundish or irregular, becoming whitish in the centre, with a brownish border; perithecia minute, semi-emergent, black, pierced at the apex; tendrils white; sporidia cylindrical, obtuse at their extremities, containing from 5 to 7 nucleoli.—*West. Bull. de Brux.* 1852, xix. part iii. p. 121. *Bell. Cat. Crypt. Namur*, n. 350. *Cooke Seem. Journ.* iv. p. 97. *Cooke exs. no.* 300.

On leaves of *Viburnum opulus* and *V. lantana*. Oct.

1322. Septoria unedinis. Rob. "Arbutus Septoria."

Epiphyllous; spots small, numerous, irregular, whitish, with a broad purplish margin; perithecia few, scarcely prominent, blackish, convex, then collapsing and becoming concave; sporidia elongated, slender and curved.—*Desm. Ann. Sc. Nat. ser.* 3, iii.

1847, p. 20. *Pl. Crypt. exs. Ed. i. no. 1713. Cooke Seem. Journ. iv. p. 97, f. 24. Sphæria unedinicola, Eng. Fl. v. p. 279. Cooke exs. no. 135. Cooke L.F. no. 69.*

On leaves of *Arbutus unedo*. Oct. Nov. Common.

1323. Septoria hydrocotyles. *Desm.* "Flukewort Septoria."

Epiphyllous; spots irregular, rufous or brownish, then pallid; perithecia minute, innate, pierced with a terminal pore; tendrils whitish; sporidia linear, curved, containing numerous opaque nucleoli.—*Ann. Sc. Nat. ser. 2. xvii. p. 109. Pl. Crypt. exs. Ed. i. no. 1175, Ed. ii. no. 675. Cooke Seem. Journ. iv. p. 97, f. 31. Cooke exs. no. 134.*

On leaves of *Hydrocotyle vulgaris*. Summer. Common.

1324. Septoria ficariæ. *Desm.* "Figwort Septoria."

Amphigenous; spots roundish or confluent, pallid, cinereous in the centre, with an irregular brownish margin; perithecia innate, very small, black, convex, at length plane; tendrils white; sporidia linear, straight, or curved.—*Ann. Sc. Nat. ser. 2, xv. p. 135. Pl. Crypt. exs. Ed. i. no. 1087. Cooke Seem. Journ. iv. p. 97, fig. 26. Rhabdospira ficariæ, Mont. Fl. Alg. i. p. 596. Cooke exs. no. 131.*

On leaves of *Ranunculus Ficaria*. Common.

1325. Septoria menyantes. *Desm.* "Bogbean Septoria."

Amphigenous. Spots tawny-rufous, irregular; perithecia very minute, of the same colour, pierced with a terminal pore; tendrils white; sporidia linear, straight or curved, nucleoli scarcely distinct.—*Ann. Sc. Nat. ser. 3, xx. p. 89, 1853. Desm. exs. Ed. i. no. 2178, Ed. ii. no. 1828. Cooke Seem. Journ. iv. p. 97. Ascochyta menyantis, Lib. exs. no. 251. Lasch. Rabh. exs. no. 860.*

On fading leaves of *Menyanthes trifoliata*.

1326. Septoria clematidis. *Rob.* "Clematis Septoria."

Amphigenous; spots greyish, with a brownish border, rounded, angular or irregular; perithecia on the upper surface, very minute, innate, scarcely prominent, pallid-brown, pierced with a terminal pore; tendrils whitish; sporidia elongated, curved or flexuose, with numerous nucleoli.—*Desm. Ann. Sc. Nat. ser. 3, xx. p. 93*

(1853). *Desm. exs. Ed. i. no. 2186, Ed. ii. no. 1836. Cooke Seem. Journ. iv. p. 97. Cooke exs. no. 132. Cooke L. F. no. 66.*

On leaves of *Clematis vitalba*. Summer and Autumn.

Common.

1327. Septoria epilobii. *West.* "Willow-herb Septoria."

Amphigenous; spots olivaceous, irregular or angular, delimited by the veins of the leaves, or confluent; perithecia on both surfaces, very small, brown, pierced with a terminal pore; tendrils white, very delicate; sporidia elongated, slender, straight, curved, or flexuose, with numerous nucleoli.—*Bull. de Brux. 1852, xix. part iii. p. 120. Bell. Cat. Crypt. Namur. no. 324. Cooke Seem. Journ. iv. p. 97. Desm. Ann. Sc. Nat. ser. 3, xx. (1853), p. 94. Desm. exs. Ed. i. no. 2188, Ed. ii. no. 1838.*

On living leaves of *Epilobium*.

1328. Septoria rosarum. *West.* "Rose-leaf Septoria."

Epiphyllous; spots small, round, scattered, pallid, surrounded by a purplish border; perithecia rare, semi-emergent, blackish; tendrils whitish; sporidia flexuose, cylindrical, obtuse at the extremities, with from 3 to 6 nucleoli.—*Bull. de Brux. 1851, p. 396. Cooke Seem. Journ. iv. p. 97. Septoriarosæ, β. minor, West. and Wall. exs. no. 426.*

On living leaves of roses in gardens.

1329. Septoxia sedi. *West.* "Orpine Septoria."

Epiphyllous; spots circular, greyish; perithecia numerous, minute, nearly black, scattered over the spots pierced with a terminal pore; tendrils white; sporidia linear, usually straight or slightly curved, with about five nucleoli.—*Bull. de Brux. ser. 2, ii. no. 107. West. & Wall. exs. no. 943. Cooke Seem. Journ. iv. p. 97. f. 29. Cooke exs. no. 133. Ascochyta sedi, Lib. exs. no. 249.*

On leaves of *Sedum telephium*. Sept.

1330. Septoria sorbi. *Lasch.* "Mountain Ash Septoria."

Epiphyllous; perithecia minute, aggregate, semi-innate, nearly black. Sporidia elliptic, slightly pointed at the extremities, so as to be almost almond-shaped.—*Lasch. Klotsch. Herb. Myc. no. 459. Cooke Seem. Journ. iv. p. 97, fig. 25. Cooke exs. no. 128. Cooke L. F. no. 67. Fckl. exs. no. 509. Depazea sorbicola. Rabh. exs. no. 548.*

On leaves of *Sorbus aucuparia*. Autumn. Common.

1331. Septoria fraxini. *Desm.* "Ash-leaf Septoria."

Epiphyllous; perithecia minute, black, semi-innate, clustered together in irregular spots. Sporidia cylindrical, truncate at the extremities, containing numerous nucleoli.—*Desm. exs. no. 1086. West. Bull. de Brux.* xviii. no. 76. *Fr. El.* ii. p. 119. no. 3. *Bisch. f.* 3517. *Cooke Seem. Journ.* iv. p. 97. *Cooke exs. no. 202. Fckl. exs. no. 507. Septoria Badhami, var. β. Fraxini. Awd. Rabh. exs. no. 852.*

On leaves of ash. Common.

In habit it differs from *S. Sorbi*, in which the perithecia are aggregated about the margin of the leaves, and also from that of *S. Badhami*, with which some authorities have associated it. This is probably only a condition of *Sphærella inæqualis*.

1332. Septoria chelidonii. *Desm.* "Celandine Septoria."

Amphigenous; spots grey, whitish, or of a brownish tint; perithecia innate, minute, nearly black, pierced with a large apical pore; tendrils yellowish; sporidia elongated, linear, straight, or curved, with several nucleoli.—*Desm. exs. no. 1176. Cooke Seem. Journ.* iv. p. 97. *Ascochyta chelidonii. Lib. exs. no. 57. Spilosphaeria chelidonii. Rabh. exs. 552. Cooke exs. no. 204.*

On leaves of *Chelidonium majus*.

1333. Septoria scabiosæcola. *Desm.* "Scabious Septoria."

Amphigenous; spots orbicular, of a violet-brown, marked in the centre with a white point, which bears the solitary perithecium containing the elongated sporidia.—*Ann. Sc. Nat.* 1853. xx. p. 96. *Cooke Seem. Journ.* iv. p. 97. *Depazea scabiosæcola. Desm. exs. ed. i. no. 722, ed. ii. no. 179. Sphaeria lichenoides, var. scabiosæcola? De Cand. Fl. Fr. Ascochyta scabiosæ. Rabh. exs. no. 1253. Spilosphaeria scabiosæ. Rabh. exs. no. 557.*

On leaves of *Scabious*. Autumn. Common.

1334. Septoria scleranthi. *Desm.* "Knawel Septoria."

Spots obliterated; perithecia densely scattered, rather prominent, convex, black. Ostiole minute, conical. Sporidia linear, slightly curved, nucleoli scarcely distinct.—*Bull. Soc. Bot. Fr.* 1857, p. 861. *Desm. exs. ed. ii. no. 689. Cooke Seem. Journ.* iv. p. 97, fig. 30.

On all parts of *Scleranthus annuus*. Summer and Autumn.

1335. Septoria gei. Desm. "Avens Septoria."

Amphigenous; spots orbicular or irregular, brown at first, cinereous when dry, with a purplish-brown margin. Perithecia on the upper surface, very minute, numerous, brownish-black, sometimes arranged along the veins of the leaves, at first hemispherical, becoming at length concave. Sporidia linear, flexuose.—*Ann. Sc. Nat.* 1843, xix. p. 342. *Cooke Seem. Journ.* iv. p. 97. *Cooke exs.* no. 138. *Sphæria lichenoides*, var. *geicola*. *De Cand. Fl. Fr.* p. 149. *Sphæria (Depazea) vagans geicola*. *Fr. S.M.* ii. p. 532. *Acrotheca gei*, *Fuckel, Enum.* p. 43.

On leaves of *Geum urbanum*. Autumn.

1336. Septoria lysimachiae. West. "Moneywort Septoria."

Epiphyllous; spots indeterminate, brown; perithecia minute, scattered, terminated by a pore; tendrils whitish; sporidia linear, straight, with numerous nucleoli.—*Bull. de Brux.* 1852, iii. p. 120. *Bell. Cat. Crypt. Nam.* no. 333. *Cooke. Seem. Journ.* iv. p. 97. *Cooke exs.* no. 142. *Fckl. exs.* no. 513. *Ascochyta lysimachiae*. *Lib. exs.* no. 253.

On leaves of *Lysimachia nummularia*.

1337. Septoria castanæcola. Desm. "Chestnut-leaf Septoria."

Amphigenous; spots tawny, indeterminate; perithecia on the under surface, brownish-black, minute, numerous, somewhat innate, pierced with a terminal pore; tendrils whitish; sporidia elongated, slender, curved.—*Ann. Sc. Nat.* 1847, viii. p. 26. *Cooke Seem. Journ.* iv. p. 97. *Cooke exs.* no. 129. *Fckl. exs.* no. 508. *Kl. exs.* no. 1957. *Cooke, L. F.* no. 68.

On fading leaves of *Castanea vesca*. Sept. Common.

It is very probable that this is only a condition of *Sphærella sparsa* or *Sphærella maculæformis*.

1338. Septoria ribis. Desm. "Currant-leaf Septoria."

Amphigenous; spots numerous, small, irregular and angular, of a pale brown or purple colour; perithecia innate, very small, blackish-brown, convex, pierced with a large apical pore; tendrils flesh colour, or roseate; sporidia elongated, linear, containing numerous nucleoli.—*Mem. Soc. des Sc. de Lille*, 1842. *Cooke Seem. Journ.* iv. p. 97, f. 32. *Cooke exs.* no. 130. *Fckl. exs.* no.

498. *Desm. exs. no. 1179. Ascochyta ribis, Libert, exs. no. 53. West. and Wall, exs. no. 92. Phlæospora ribis, West. Bull. de Brux, 1850, p. 20.*

On leaves of black currant. Common.

1339. Septoria alnicola. *Cooke.* "Alder Septoria."

Spots pallid, brown or tawny, rounded, about one-fourth of an inch in diameter; perithecia minute, scattered over the spots, semi-innate, black, pierced at the apex; sporidia oblong, straight or curved.—*Cooke Seem. Journ. iv. p. 97, f. 23. Cooke exs. no. 203.*

On living leaves of *Alnus glutinosa*. Autumn.

1340. Septoria lavandulæ. *Desm.* "Lavender Septoria."

Spots on both surfaces, numerous, bleached, rounded or irregular, with a purplish margin; perithecia on the upper surface, few, very small, black, globose, pierced, cup-shaped when dry; spores linear, straight or curved.—*Desm. Ann. Sc. Nat. 1853, xx. p. 86. Cooke exs. no. 139.*

On fading lavender leaves. Summer.

Spores ('025 m.m.) '009 in. long.

1341. Septoria urticæ. *Desm.* "Nettle Septoria."

Spots on both surfaces; ochraceous, rounded, or irregular; perithecia very minute, epiphyllous, numerous, brown, pierced; spores elongated, slender, curved or flexuous.—*Desm. Ann. Sc. Nat. 1847, viii. p. 24. Cooke exs. no. 137.*

On nettle leaves. Summer.

Spores ('04 m.m.) '0015 in long.

1342. Septoria astragali. *Desm.* "Milk-vetch Septoria."

Epiphyllous; spots irregular, greenish-grey, then tawny; perithecia few, globose, slightly prominent, black, pierced; spores very long, flexuous, multiseptate (?).—*Desm. Ann. Sc. Nat. 1843, xix. p. 345. Cooke exs. no. 141. Cooke L. F. no. 70.*

On leaves of milk-vetch (*Astragalus*). Autumn.

1343. Septoria virgaureæ. *Desm.* "Golden-rod Septoria."

Epiphyllous; spots orbicular or irregular, bleached, whitish, and brown, variegated; perithecia innate, minute, convex, nearly black, mouth widely open; tendrils white; spores very long, linear, nearly straight or flexuous.—*Desm. Ann. Sc. Nat. 1842, xvii. p.*

109. *Cooke exs. no. 144. Ascochyta virgaureæ, Lib. exs. no. 55. Rabh. exs. no. 1321.*

On leaves of *Solidago virgaurea*.

Spores ($\cdot 1\cdot 05$ m.m.) $\cdot 0035\text{--}\cdot 002$ in. long.

Gen. 123.

PHYLLOSTICTA, Pers.

Perithecia few and minute, innate; pierced with a terminal pore, seated on discoloured spots; nucleus gelatinous; sporidia ovoid or oblong, straight, minute, ejected in tendrils.

It is doubtful whether any satisfactory characters have yet been indicated to separate this genus from *Septoria*.

1344. Phyllosticta atriplicis. *Desm.* "Goose-foot Phyllosticta."

Amphigenous; spots orbicular, whitish, with a tawny or brownish margin, scattered or confluent; perithecia on the upper surface, very minute, numerous, globose, innate, brownish-black, pierced at the apex; tendrils yellowish-white; sporidia cylindrical, obtuse, straight or curved, and somewhat torulose, with from three to five nucleoli.—*Ann. des Sc. Nat.* 1851, xvi. p. 298. *Cooke Seem. Journ.* iv. p. 97. f. 22. *Sphæria (Depazea) vagans, atriplicicola, Fr. S.M.* ii. p. 582. *Cooke exs. no. 148. Cooke L. F.* no. 71.

On leaves of *Atriplex* and *Chenopodium*.

1344a. Phyllosticta cirsii. *Desm.* "Thistle Phyllosticta."

Epiphyllous; spots roundish or irregular, numerous, whitish with a brown margin; perithecia innate, black; sporidia very minute, oblong, with two nucleoli.—*Ann. Sc. Nat.* 1847. viii. p. 31. *Cooke Seem. Journ.* iv. p. 97.

On leaves of *Cirsium arvense*. Sept.

1345. Phyllosticta viciæ. "Vetch Phyllosticta."

Epiphyllous; spots white, rounded, with a purplish margin; perithecia minute, aggregate, black, with a terminal pore; tendrils white; sporidia ellipsoid with two, sometimes three nucleoli.—*Cooke Seem. Journ.* iv. p. 97. *Ascochyta viciæ, Lib. exs. no. 356. Phyllosticta Ervi? West. Bull. des Brux.*

On leaves of *Vicia sepium*. Oct.

- 1346. *Phyllosticta ruscicola.* D.R. and Mont.** "Butcher's Broom *Phyllosticta*."

Amphigenous; spots pallid, with a reddish-brown margin; perithecia scattered over the spots, covered by the epidermis, globose, black; sporidia oblong.—*Fl. Alg. i. p. 611. Mont. Syll. p. 279. Desm. Ann. Sc. Nat. 1847, viii. p. 32. Desm. exs. no. 1634. West. Bull. de Brux. vii. p. 23. Cooke Seem. Journ. iv. p. 97.*

On the phyllodia of *Ruscus aculeatus*. Autumn.

- 1347. *Phyllosticta cytisi.* Desm.** "Laburnum *Phyllosticta*."

Spots few, round or irregular, grey, with a brown margin; perithecia epiphyllous, black, numerous; sporidia ovoid-oblong, with two nucleoli.—*Ann. Sc. Nat. 1847, viii. p. 34. Desm. exs. no. 1861. Cooke Seem. Journ. iv. p. 97. Cooke exs. no. 150.*

On fading leaves of *Cytisus Laburnum*. Autumn.

- 1348. *Phyllosticta sambuci.* Desm.** "Elder *Phyllosticta*."

Epiphyllous; spots whitish, solitary, or confluent, and disposed in a line; perithecia innate, minute, few, brownish-black, pierced with a terminal pore; nucleus whitish; sporidia ovoid-oblong, with two nucleoli.—*Ann. Sc. Nat. 1847, viii. p. 34. Desm. exs. no. 1638. Cooke Seem. Journ. iv. p. 97, f. 28.*

On fading leaves of elder. Autumn.

- 1349. *Phyllosticta primulæcola.* Desm.** "Primrose *Phyllosticta*."

Spots occupying both surfaces of the leaves, large, blanched, oftentimes with a yellowish border; perithecia epiphyllous, numerous, rather prominent, globose, black, shining; sporidia subglobose, very small.—*Ann. Sc. Nat. 1847, viii. p. 130. Desm. exs. no. 1629. Cooke Seem. Journ. iv. p. 97. Cooke exs. no. 147.*

On fading leaves of *Primula vulgaris*. Autumn. Common.

- 1350. *Phyllosticta limbalis.* Pers.** "Box-leaf *Phyllosticta*."

Spots oval or oblong, ivory white, with a discoloured margin, generally at the edges of the leaves; perithecia rare, blackish, scattered, sometimes confluent; spores oblong, hyaline, with three or four nucleoli.—*Pers. Champ. Comest. Cooke Seem. Journ. iv. p. 97. Depazea buxicola. Fr. S.M. ii. 528. Fckl. exs.*

no. 429. *Sphæria lichenoides* var. *buxicola*. De Cand. Welw. Crypt Lusit. no. 21.

On living box leaves. Oct.

1351. Phyllosticta erysimi. West. "Sauce alone Septoria."

Spots blanched, rounded, with a linear dark brown margin; perithecia numerous, black, scattered about the centre of the spot; ostiole poriform; sporidia oval, hyaline, containing two nucleoli at the extremities.—West. Bull. de Brux. 1863, no. 21. Cooke Seem. Journ. iv. p. 97.

On leaves of *Erysimum alliaria*. Autumn.

1352. Phyllosticta violæ. Desm. "Violet Phyllosticta."

Amphigenous; spots whitish, rounded, scattered, or confluent; perithecia innate, numerous, microscopical, brown; tendrils white; spores very minute, straight, sub-cylindrical.—Desm. Ann. Sc. Nat. 1847, viii. p. 29.

On violet leaves. June. July.

Spores .01 m.m. long.

1353. Phyllosticta vulgaris var. *Lonicæræ*. Desm. "Honeysuckle Phyllosticta."

Spots on both surfaces, scattered, rounded, or irregular, olive brown, grey, or whitish; perithecia immersed, globose, then depressed, amber colour then brown, pierced; spores minute, cylindrical, straight, obtuse.—Desm. Ann. Sc. Nat. 1849, xi. p. 350. Cooke exs. no. 149. Cooke L.F. no. 72.

On honeysuckle leaves. Autumn.

Gen. 124. CHEILARIA, Libert.

Perithecia sub-globose, dehiscing with a fissure; nucleus gelatinous; sporidia more or less globose, ejected in tendrils.

1354. Cheilaria arbuti. Desm. "Arbutus Cheilaria."

Epiphyllous; spots minute, dark-coloured; perithecia minute, crowded, black, shining, roundish-oblong, dehiscing by a longitudinal fissure; nucleus at first whitish, ultimately blackened; sporidia ovoid, minute, with two nucleoli.—Ann. Sc. Nat. 1846, vi. p. 68. Cooke Seem. Journ. iv. p. 97. Dothidea arbuti, Duby. Bot. Gall. ii. p. 717.

On leaves of *Arbutus unedo*. Jan.

1354a. Cheilaria coryli. *Rob.* "Hazel-leaf Cheilaria."

Amphigenous; spots irregular, rufous; perithecia hypophyllous rarely epiphyllous, innate, membranaceous, sub-gregarious, very small, roundish, pallid brown, dehiscing with a longitudinal fissure; nucleus white; sporidia hyaline, oblong, somewhat truncate, wedge-shaped, or fiddle-shaped.—*Desm. Ann. Sc. Nat.* 1853, xx. p. 226. *Desm. exs. ed. ii. no. 80.* *Cooke Seem. Journ.* iv. p. 97. *Cooke exs. no. 154.*

On leaves of *Corylus avellana*. Autumn.

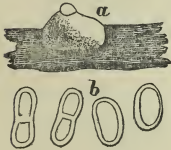
Gen. 125.**ASCOCHYTA, Lib.**

Fig. 167.

Perithecia distinct, delicate; spores oozing out, uniseptate, or simple.—*Berk. Outl. p. 320.* (Fig. 167.)

1355. Ascochyta pisi. *Lib.* "Pea-pod Ascochyta."

Spots somewhat rounded, excavated, fawn-coloured, margin brown; perithecia sub-central, very delicate, brownish; mouth round; spores oblong, uniseptate, contracted in the middle.—*Berk. Outl. p. 320.* *Sphæria (Depazea) concava.* *Berk. Ann. N.H. no. 194, t. 11, f. 3.* *Fckl. exs. no. 487.*

On pea pods.

Forming little round fawn-coloured pits, studded in the centre with the short sub-cirrhiform masses of spores. Spores oblong, contracted in the middle, uniseptate, with occasionally a single nucleus in each cell.—*M. J. B.* (Fig. 167.)

1356. Ascochyta pallor. *Berk.* "Pallid Ascochyta."

Spots pallid, sub-rotund; perithecia scattered, immersed, pallid; epidermis rather prominent above the obsolete ostiola; spores linear, curved slightly.—*Berk. Outl. p. 320.* *Sphæria (Depazea) pallor.* *Berk. Ann. N.H. no. 193, t. 11, f. 2.*

On living bramble shoots. May.

Forming sub-rotund, sometimes confluent, pale spots, sprinkled with little elevated dark-bordered dots, which indicate the perithecia; perithecia extremely delicate, pale fawn-coloured, filled with linear slightly curved spots, much larger than in *Cytispora*, some of which contain an obscure row of nuclei.

1357. *Ascochyta dianthi*. Berk. "Pink-leaf Ascochyta."

Perithecia irregular, conglomerate; spores spathulate, sometimes divided into two parts, containing a few globose granules.—*Berk. Outl. p. 320. Sphæria (Depazea) dianthi* A. & S. t. 6, f. 2. *Berk. exs. no. 187. Berk. Ann. N.H. no. 104, t. 7, f. 5. Fckl. exs. no. 490. Kl. exs. no. 863.*

On living pink leaves, &c.

1358. *Ascochyta rufo-maculans*. Berk. "Brown-spot Ascochyta."

Spots orbicular, red-brown; perithecia emergent, free, of the same colour; spores oblong, simple, constricted in the centre.—*Berk. Outl. p. 320. Septoria rufo-maculans. Berk. Gard. Chron. 1854, p. 676, with fig.*

On grapes.

Forming an orbicular spot of a sienna brown, preserving constantly a definite outline. This spot separates readily from the subjacent pulp, in consequence of a copious crop of mycelium, the threads of which form the radii of a circle. The surface is rough with little raised orbicular reddish perithecia arranged concentrically; spores varying from '0008 to '0065 in. ('02 to '15 m.m.) In age the perithecia fall away, leaving a little aperture, the border of which is often stained black.

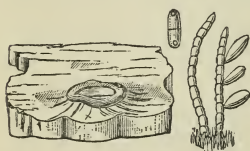
Gen. 126.**CYSTOTRICHA, B. & Br.**

Fig. 168.

Perithecia bursting longitudinally; sporophores branched, articulated, beset here and there with oblong, uniseptate spores.—*Berk. Outl. p. 320. B. & Br. Ann. N.H. no. 448. (Fig. 168.)*

1359. *Cystotricha striola*. B. & Br. "Seriata Cystotricha."

Perithecia punctiform or linear, often forming little rows, black, with a reddish tinge; disc reddish; sporophores highly developed, greatly elongated, bearing one or two branches above, articulate from the base, sub-moniliform, articulations about as long as broad, giving off here and there oblong pellucid spores, at first simple, at length uniseptate.—*B. & Br. Ann. N.H. no. 448, t. 12, f. 10.*

On decorticated wood.

It has nearly the structure of *Tubercularia*, with the addition of a perithecium, the sporophores being closely articulate. (Fig. 168.)

Gen. 127.

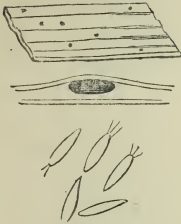
NEOTTIOSPORA, Desm.

Fig. 169.

Perithecia concealed, with a central perforation; spores hyaline, crested.—*Berk. Outl. p. 320.* (Fig. 169.)

1360. Neottiospora caricum. Desm. "Sedge Neottiospora."

Amphigenous; perithecia scattered, minute, rusty brown, at length umber, nestling in the parenchyma of the leaf, covered by the blackened cuticle; tendrils orange; spores minute, sub-hyaline.—*Desm. Ann. Sc. Nat. 1843. xix. p. 346.* *Desm. exs. no. 1338.* *B. & Br. Ann. N.H. no. 435.* *Rabh. F.E. no. 42.* *Sphæria caricina. Desm. exs. no. 717.*

On dead leaves of *Carices*.

Remarkable for the appendage of short hyaline threads, with which the spores are furnished at one extremity. (Fig. 169.)

Gen. 128.

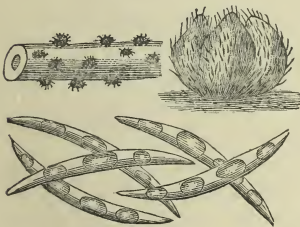
EXCIPULA, Fr.

Fig. 170.

Perithecia delicate, hispid, open above (excipuliform); spores hyaline, attenuated, but not appendiculate.—*Berk. Outl. p. 321.* (Fig. 170.)

1361. Excipula strigosa. Fr. "Grass Excipula."

Innate, sessile, flattened, concave, strigose, black, disc pale; spores fusiform, curved, acuminate.—*Fries exs. no. 136.* *Eng. Fl. v. p. 296.* *Peziza strigosa. Fr. S.M. ii. p. 103.* *Corda. Icon. iii. f. 78.* *Lib. exs. no. 349.* *Kl. exs. no. 1236.*

On culms and leaves of grass.

(Fig. 170.)

1362. *Excipula macrotricha.* B. & Br. "Furze Excipula."

Perithecia hispid, hairs long, straight; spores minute, lunulate.—*B. & Br. Ann. N.H. no. 444.*

On dead furze branches.

Perithecia larger than in the other species, coarsely hispid, hairs long, their inner tube separating easily from the outer.

1363. *Excipula chætostroma.* B. & Br. "Ash-key Excipula."

Gregarious, convex, cinereous, everywhere penetrated by black bristles; spores lunate, sub-fusiform.—*B. & Br. Ann. N.H. no. 445, t. 11, f. 2.*

On dead ash keys. Somerset.

Minute, convex, black; disc rough with the long inarticulate bristles, which everywhere penetrate its substance; spores on rather long, fasciculate, or connate sporophores, lunate, subfusiform, acute at either extremity, pale; endochrome granulated, green under the microscope.—*B. & Br.*

1364. *Excipula fusispora.* B. & Br. "Clematis Excipula."

Minute, very black, invested with rigid bristles; spores fusiform, multiseptate, middle articulations darker.—*B. & Br. Ann. N.H. no. 814, t. 9, f. 1.*

On bark of *Clematis vitalba*. Jan. Batheaston.

Forming very minute black specks, perithecia clothed with dense, slightly waved, continuous setæ; spores curved, fusiform, .002 in. (.05 m.m.) long, multiseptate, the two extreme articulations hyaline, the others rather darker, and generally containing a globose nucleus.—*B. & Br.*

Gen. 129.

DINEMASPORIUM, Lev.

Perithecia excipuliform, delicate, hispid; spores hyaline, aristate at either extremity.—*Berk. Outl. p. 321.* (Fig. 171.)



Fig. 171.

1365. *Dinemasporium graminum.*

Lev. "Grass Dinemasporium."

Perithecia scattered, hairy, with simple, black bristles; spores cylindrical, obtuse, curved, aristate.—*Lev. Ann. Sc. Nat. May, 1846, p. 274. B. & Br. Ann. N.H. no. 446. Excipula graminum. Berk. exs. no. 328. Lib. exs. no. 348. Corda. Icon. iii. f. 79. Fckl. exs. no. 204.*

On leaves of grasses.

var. herbarum. Cooke. Larger than the typical form, but hardly differing in fruit.—Cooke *exs.* no. 279.

On stems of nettle, &c.

An allied species of this genus occurs in South Carolina, U.S. (*Fig* 171.)

Gen. 130.

MYXORMIA, B. & Br.

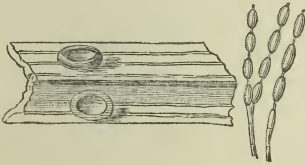


Fig. 172.

Perithecium composed of flocci with free apices, open above; spores concatenate, involved in gelatine.—*Berk. Outl. p.* 321. *B. & Br. Ann. N.H. no.* 447. (*Fig* 172.)

Allied to *Excipula*, but separated from it by habit, by the absence of flocci, and above all

by its concatenate spores. The spores collectively are very gelatinous. .

1366. Myxormia atro-viridis. B. & Br. “Black Green Myxormia.”

Perithecia excipuliform, scattered, minute, quite smooth, formed of long, closely-packed narrow cells; sporophores filiform; spores linear-oblong, concatenated.—*B. & Br. Ann. N.H. n.* 447, *t.* 12, *f.* 9.

On dead leaves of grass. Dec. Batheaston.

Spores connected by a very delicate thread, which frequently breaks off with them, containing one or more globose nuclei, generally one at either end, involved in gelatine, forming a black green mass, resembling strongly the fructifying stratum in the genus *Phallus*. (*Fig* 172.)

Gen. 131.

PROSTHEMIUM, Kunze.

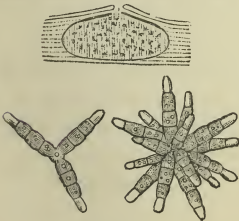


Fig. 173.

Perithecia carbonaceous; spores fasciculate, fusiform, septate, attached to articulated threads.—*Berk. Outl. p.* 321. *Eng. Fl. v. p.* 297. (*Fig* 173.)

1367. Prosthemium stellare. *Riess.* "Stellate Prosthemium."

Perithecia sub-lentiform, black, covered; spores brown, 12-20 connate in a stellate manner, at length ejected in tendrils.—*Riess. Bot. Zeit.* 1853, p. 130, t. 3, f. 28-31. *B. & Br. Ann. N.H.* no. 939, t. 15, f. 10.

On alder. West of England. (Fig. 173.)

PROSTHEMIUM BETULINUM, *Kze.* is a condition of *Massaria siparia*.

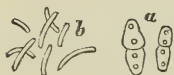
gen. 132.**ASTEROMA, D.C.**

Fig. 174.

Perithecia flat, with no determinate orifice, attached to creeping branched threads; spores simple, or uniseptate.—*Berk. Outl.* p. 321. *Eng. Fl.* v. p. 288. (Fig. 174.)

1368. Asteroma reticulatum. *Berk.* "Reticulated Asteroma."

Epiphyllous, black, sub-seriate, the cells joined by free longitudinal creeping, somewhat branched fibrillæ.—*Berk. exs.* no. 41. *Eng. Fl.* v. p. 288. *Dothidea reticulata.* *Fr. S.M.* ii. p. 560. *Sturm.* iii. t. 13. *Moug. exs.* no. 982. *Asteroma polygonati* *D.C. Mem. Mus.* t. 4, f. 5. *Fckl. exs.* no. 464.

On dead leaves of *Convallaria majalis*. King's Cliffe.

1369. Asteroma ulmi. *Kl.* "Elm-leaf Asteroma."

Fibrillæ very delicate, much branched, radiating, sub-dichotomous, flexuous, seated on a brownish spot.—*Klotsch. Hook. Herb. Eng. Fl.* v. p. 289. *Cooke L.F.* no. 74. *Cooke exs.* no. 155.

On living elm leaves. Scotland.

1370. Asteroma prunellæ. *Purt.* "All-heal Asteroma."

Epiphyllous, fibrillæ pitch black, straight, radiating in fascicles from a central tubercle, cells minute, sub-central—*Baxt. exs.* no. 79. *Eng. Fl.* v. p. 289.

On green leaves of *Prunella vulgaris*.

It has the appearance of a minute *Hutchinsia*, spread out upon the leaf, with its knob-like root in the centre.—*M. J. B.*

1371. Asteroma padi. *Grev.* "Bird Cherry Asteroma."

Radiating, much branched, the branches arcuate, brown, with a central silvery line; spores at length oozing out, linear, very minute, slightly curved.—*Grev. Loud. Hort. B. p. 459. Eng. Fl. v. p. 289. Ann. N.H. no. 201* t. 11, f. 4.*

On leaves of *Prunus padus*. Scotland. (*Fig. 174b.*)

1372. Asteroma rosæ. *D.C.* "Rose leaf Asteroma."

Epiphyllous; spots purplish, fibrils radiating from the centre; perithecia scattered, blackish; spores consisting of two obovate cells attached by their broader ends, and each containing two nuclei.—*Lib. exs. no. 61. Berk. Ann. N.H. no. 202, t. 11, f. 5. Asteroma radiosa. Berk. exs. no. 314. Fries. El. ii. p. 151. Cooke exs. no. 156. Cooke L.F. no. 73.*

On rose leaves. Autumn. Common. [Low Carolina.]
(*Fig. 174a.*)

ASTEROMA VERONICÆ. *Desm.* (*Berk. exs. no. 193*) is an early condition of *Capnodium sphæricum*, Cooke, as traced by Dr. Capron, of Shere.

Gen. 133. **RABENHORSTIA, Fr.**

Conceptacle thin, sub-carbonaceous, cup-shaped, dimidiate, above covered with the adnate cuticle, celluloso-loculose within, ostiolum simple; nucleus gelatinous.—*Berk. Outl. p. 322.*

1373. Rabenhorstia rudis. *Fr.* "Laburnum Rabenhorstia."

Crowded or scattered, furnished with a black, effused, ambient crust; perithecia covered, villosio-furfuraceous, dingy-black, at length dimidiate from the peeling off of the epidermis; nucleus pale whitish rose colour.—*Fr. El. ii. p. 98. Eng. Fl. v. p. 270.*

On dead twigs of *Laburnum*.

1374. Rabenhorstia tilia. *Fr.* "Lime Rabenhorstia.."

Scattered; perithecia covered, smooth, black, somewhat pitcher-shaped, dimidiate, neck erumpent, unequal, black.—*Sphæria tilia. Fr. S.M. ii. p. 485. Eng. Fl. v. p. 269. Nees. f. 339. Fckl. exs. no. 582. Moug. exs. no. 660. Sphæria subsecrta. Sow. t. 373, f. 8.*

On dead twigs of lime.

Gen. 134.

CYTISPORA, Fr.

Perithecia irregular, or compound and radiating; spores minute, mostly curved, oozing out from a common spot in the form of globules or tendrils.—*Berk. Outl. p. 322. Eng. Fl. v. p. 281.*

All the species of *Cytispora* are merely conditions of different species of *Valsa*, &c. The following are given in Berkeley's outlines:—

Cytispora rubescens. Fr. On dead twigs of *Rosaceæ*.

Cytispora chrysosperma. Fr. On dead poplar.

Cytispora carphosperma. Fr. On dead twigs of *Rosaceæ*.

Cytispora leucosperma. P. On various trees.

Cytispora fugax. Fr. On dead willows.

Cytispora Hendersonii. B. & Br. On twigs of *Rosa arvensis*.

Cytispora pinastri. Fr. On fallen pine leaves.

Cytispora guttifera. Fr. On dead willow twigs.

Gen. 135.

MICROPERA, Lev.

Perithecia innate, membranaceous, gaping above, without any common ostiolum; spores simple, linear.—*Berk. Outl. p. 322.*

1375. Micropera drupacearum. Lev. "Cherry Micropera."

Perithecia pustulate, innate, sub-cylindrical, deformed by mutual pressure; ostiola white; spores curved above.—*Lev. Ann. Sc. Nat. May, 1846, p. 283. Kl. exs. no. 1960. B. & Br. Ann. N.H. no. 437. Pers. Ic. Pict. t. 20, f. 1. Fckl. exs. no. 638.*

On dead branches of cherry. King's Cliffe.

Probably not autonomous. Tulasne states it is the *Pycnidia* of *Dermatea Cerasi*.

Gen. 136.

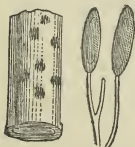
DISCELLA, B. & Br.

Fig. 175.

Perithecium spurious, nearly simple, sometimes obsolete above, or entirely wanting, and hence excipuliform; spores elongated, simple, or uniseptate.—*Berk. Outl. p. 323. B. & Br. Ann. N.H. no. 426. (Fig. 175.)*

The perithecium is so little distinct from the stratum of sporophores, that it is frequently difficult, in examining a slice under the microscope, to say that it exists, though the two together are sometimes of considerable thickness, neither is the limit between the external cells and those of the matrix very accurately defined. In the same species it is sometimes entirely wanting above, and the sporophorous stratum merely covered by the cuticle, which at last splits, and exposes the excipuliform disc, while in other cases the spurious perithecium extends all round, being intimately blended with the cuticular cells. The cavity is essentially simple, but there is sometimes a slight fold or two below, showing a tendency to become multicellular, occasionally the centre is vacant, and the perithecium then forms an irregular ring.—*B. & Br.*

1376. *Discella carbonacea.* B. & Br. "Black Discella."

Perithecium black; spores elongated, subfusiform, pale yellow-green by transmitted light, uniseptate.—*Ann. N.H. no. 426, t. 12, f. 8, d. Phacidium carbonaceum, Fries. exs. no. 210. Berk. exs. no. 44. Fckl. exs. no. 1100 (partly). Stilbospora microsperma, Johnst. Fl. Ber. ii. p. 192.*

On dead willow twigs. Common.

Forming small scattered disc-like spots, covered with the cuticle, which splits from the centre, and ultimately separates. Perithecia black, generally excipuliform, but sometimes extending all round, and then bursting above with the cuticle.

1377. *Discella Desmazierii.* B. & Br. "Blue-spored Discella."

Perithecia soft, externally hyaline, internally bluish; sporophores elongated; spores fusiform, simple, indigo-blue.—*Ann. N.H. no. 427, t. 12, f. 8 a.*

On twigs of lime. Norths.

Forming scattered discs, which however are blacker than in *D. carbonacea*, from the spores being darker. Perithecium delicate, hyaline next to the matrix, then blue, obsolete above; sporophores elongated, strongly developed, sometimes forked; spores of a beautiful indigo-blue, truly fusiform, though not much elongated, without any septum, distinctly bordered, larger than in *D. carbonacea*.—*B. & Br. (Fig. 175.)*

1378. *Discella platyspora.* B. & Br. "Broad-spored Discella."

Perithecia small, for the greater part deficient above, sporophores short, stout, deciduous as well as the oblong, broad, obtuse spores.—*Ann. N.H. no. 428.*

On dead twigs of plane. Batheaston.

Forming rather minute, slightly raised pustules, perithecia but slightly developed, generally, if not always deficient above; sporophores short, obtuse, simple, often breaking off with the oblong, obtuse spores, the cavity of which is simple, but the contents decidedly granular, so as at first to give a granulated aspect to the outer wall.—*B. & Br.*

1379. *Discella microsperma.* B. & Br. "Small-spored Discella."

Perithecia black, pallid under a lens; spores minute, oblong, simple.—*B. & Br. Ann. N.H. no. 429, t. 12, f. 8 e. Berk. exs. no. 44 (partly).*

On dead willow twigs.

Resembling strongly *D. carbonacea*, but somewhat larger, and distinguished at once by the minute, oblong, simple spores, several times smaller than in that species. In some pustules the perithecia open by a minute fissure, the lips of which being elongated by the oozing out of the spores make a spurious ostiolum.—*B. & Br.*

1380. Discella abnormis. *B. & Br.* "Abnormal Discella."

Perithecia globose, spurious, pierced above with a round pore ; spores shortly fusiform, yellow-brown, uniseptate.—*B. & Br. Ann. N.H. no. 429**.

On shoots of elder. Batheaston.

Perithecia small, entirely covered with the cuticle, globose, confused with the matrix. Approaches the type of *Diplodia*.

Gen. **137. PHLYCTÆNA**, *Desm.*

Perithecium spurious, simple, never deficient above ; spores elongated.—*Berk. Outl. p. 323.*

1381. Phlyctæna vagabunda. *Desm.* "Common Phlyctæna."

Spots none, or very minute, brown, fibrillose ; pseudo-perithecia numerous, scattered ; spores hyaline, curved, elongated, linear, somewhat obtuse, with 7-9 sporules.—*Desm. Ann. Sc. Nat. 1847, viii. p. 16. Desm. exs. no. 1624. B. & Br. Ann. N.H. no. 753. Lib. exs. no. 248. Moug. exs. no. 1086.*

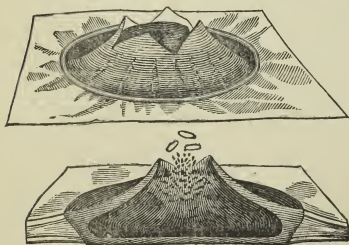
On dead teasle stems, &c.

1382. Phlyctæna Johnstonii. *B. & Br.* "Johnston's Phlyctæna."

Spots rather broad ; pseudo-perithecia brown ; sporophores flexuous, ample ; spores elongated, curved, nodulose in the middle.—*B. & Br. Ann. N.H. no. 639**.

On dead *Senecio Jacobæa*. Berwick.

Spores several times longer than in *P. vagabunda*, the sporophores highly developed, and towards the centre of the spores there is generally a distinct knot, and frequently the outline is more or less irregular.—*B. & Br.*

Gen. **138. CEUTHOSPORA**, *Fr.*

Perithecium spurious, innate, stromatiform, multicellular ; spores ejected from one or more orifices.—*Berk. Outl. p. 323.*

(*Fig. 176.*)

Fig. 176.

1383. Ceuthospora lauri. *Grev.* "Laurel Ceuthospora."

Unilocular, brownish-black, obtusely conic splitting into 3-4 acute erect laciniae; spores minute.—*Grev. t.* 254. *Eng. Fl.* v. p. 283. *Sphæria lauri.* *Sow. t.* 371, f. 4. *S. hederæ* β . *lauri.* *Fr. S.M.* ii. p. 521. *Cooke exs. no.* 157. *Berk. exs. no.* 89.

On dead leaves of cherry laurel. (Fig. 176.)

CEUTHOSPORA PHACIDIoidES, *Grev.* (*Cooke. exs. no.* 156) is an imperfect condition of *Phacidium ilicis*.

Gen. **139. ERIOSPORA,** B. & Br.

Fig. 177.

Stroma multicellular; spores ejected by a common orifice, quaternate, filiform, seated on short sporophores.—*Berk. Outl. p.* 323. *Ann. N.H. no.* 438. (Fig. 177.)

1384. Eriospora leucostoma. *B. & Br.* "White mouthed Eriospora."

Spots pitch brown; stroma depressed, cells variable, subglobose; spores very long, filiform.—*B. & Br. Ann. N.H. no.* 438, *t.* 11, *f.* 1.

On dead leaves of *Typha.* Feb. Wilts.

Spots pitch brown, very thin and diffused towards the edges, not a line broad, marked in the centre with a punctiform, white-bordered, pulverulent aperture; stroma depressed; cells varying in number, generally globose, but sometimes from the confluence of one or more depressed; spores very long, filiform, so delicate that they wave from the minute currents formed by the evaporation of the water in which placed for examination, at first seated four together on short cylindrical sporophores, but soon falling off.—*B. & Br.* (Fig. 177.)

Order XIII. MELANCONIEI.

Perithecium obsolete or altogether wanting.

Spores oozing out in a black mass.

Simple	.	.	.	.	.	.	.	<i>Melanconium.</i>
Endochrome divided	.	.	.	.	.	.	.	<i>Stegonosporium.</i>
Septate	.	.	.	.	.	.	.	<i>Stilbospora.</i>
Septate and stellate	.	.	.	.	.	.	.	<i>Asterosporium.</i>

Spores pedunculate.

Septate, not crested	.	.	.	.	.	.	.	<i>Coryneum.</i>
Septate, crested	.	.	.	.	.	.	.	<i>Pestalozzia.</i>
Simple, collected in tufts	.	.	.	.	.	.	.	<i>Cheirospora.</i>

Spores oozing out in tendrils.

Coloured.								
Of two kinds	.	.	.	.	.	.	.	<i>Nemaspora.</i>
Of one kind	.	.	.	.	.	.	.	<i>Myxosporium.</i>
Hyaline.								
Of one kind	.	.	.	.	.	.	.	<i>Glæosporium.</i>

Gen. 140.

MELANCONIUM, Link.



Fig. 178.

Spores simple, oozing out in a dark mass.—*Berk. Outl. p. 323. Eng. Fl. v. p. 357.* (Fig. 178.)

Not autonomous.

1385. Melanconium bicolor. *Nees.* "Two-coloured Melanconium."

Stroma elevated, prominent, white; spores compact, sub-globose, olive, or olive-brown.—*Nees. t. 2, f. 27. Berk. Mag. Zool. & Bot. no. 37. Cooke exs. no. 349. Fr. S.M. iii. p. 488. B. & Br. Ann. N.H. no. 250. Didymosporium elevatum. Fr. S.M. iii. p. 486. Melanconium sphæroideum. Eng. Fl. v. p. 358. Didy. betulinum. Grev. t. 273. Kze. exs. no. 157. Corda. i. f. 33-34. Fckl. exs. no. 84. Bisch. f. 3835.*

On birch.

[United States.]

(Fig. 178.)

1386. Melanconium magnum. *Berk.* "Large Melanconium."

Spores oval or sub-ovate, not septate.—*Berk. Outl. p. 324. Stilbospora magna. Eng. Fl. v. p. 357. Nemaspora carpinea.*

Bart. exs. no. 76. Nemaspora magna. Grev. t. 349. Sow. t. 376. Corda. iii. f. 58. Fckl. exs. no. 87. Pringsh. Jahrb. ii. t. 28, f. 19.

On walnut and hornbeam,

[Up. Carolina.]

Sometimes covering the whole trunk, the spores oozing out in long tendrils.

1387. Melanconium sphærospermum. Lk. "Round-spored Melanconium."

Stroma none; spores erumpent, scarcely compact, globose, pellucid, blackish.—*Fr. S.M. iii. p. 489. Berk. Ann. N.H. no 251. Rabh. F.E. No. 179. Fckl. exs. no. 86. Bot. Zeit. 1859, t. 11, f. 5. Stilbospora sphærosperma. Pers. Obs. t. 1, f. 6. Kze. exs. no. 102.*

On reeds. Tansor, Norths.

[United States.]

Gen. 141.

STEGONOSPORIUM, Corda.

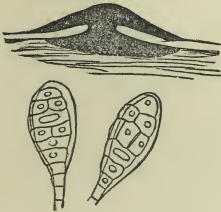


Fig. 179.

Spores unilocular, the endochrome transversely septate, or cellulose, oozing out in a black mass.—*Berk. Outl. p. 324.*

(Fig. 179.)

Not autonomous.

1388. Stegonosporium cellulolum. Corda. "Cellular Stegonosporium."

Pustules effused, black; spores sub-pyriform, longitudinally cellulose and transversely septate.—*Corda. Ic. iii. f. 62. Kl. exs. ii. no. 148. Fres. t. 7, f. 53-57. Curr. Micr. Journ. iv. t. 11, f. 10-25.*

On dead branches.

See *Valsa vestita*, of which this is a secondary fruit.

(Fig. 179.)

Gen. 142.

STILBOSPORA, Pers.

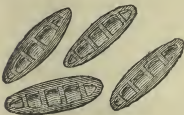


Fig. 180.

Spores septate, oozing out in a black mass.—*Berk. Outl. p. 324. Eng. Fl. v. p. 356. (Fig. 180.)*

Scarcely autonomous.

1389. Stilbospora ovata. Pers. "Ovate Stilbospora."

Stroma scarcely any; spores ovate, triseptate, septa sometimes obsolete.—*Pers. Obs. i. t. 2, f. 2. Eng. Fl. v. p. 357. Grev. t. 212, f. 2. Fr. S.M. iii. p. 485. S. pyriformis, Hoffm. F. G. ii. t. 13, f. 2. Fries. exs. no. 214. Corda. iii. f. 61. Bisch. f. 3890.*

On dead twigs.

[United States.]

1390. Stilbospora angustata. P. "Narrow Stilbospora."

Stroma scarcely any; spores cylindrical, 4-5 septate.—*Fr. S.M. iii. p. 485. Berk. Mag. Zool. & Bot. no. 36.*

On *Cornus sanguinea*.

[United States.]

(Fig. 180.)

1391. Stilbospora macrosperma. P. "Large-spored Stilbospora."

Stroma scarcely any; spores oval-oblong, quadrisepate.—*Pers. Disp. t. 3. f. 13. Nees. f. 17. Fckl. exs. no. 82. Sporidesmium, Corda. Sturm. t. 21. Bisch. f. 3879. Schnzl. t. 12, f. 16-18. Fres. t. 7, f. 46-52. Hook. Journ. 1851, iii. t. 9, f. 9. Pay. f. 254. Rabh. F.E. no. 180.*

On oak branches, &c.

[Mid. Carolina.]

The stylosporous fruit of *Sphaeria (Massaria) inquinans*.

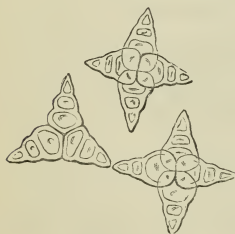
Gen. 143.**ASTEROSPORIUM, Kunze.**

Fig. 181.

Spores stellate, septate, oozing out in a black mass.—*Berk. Outl. p. 324. (Fig. 181.)*

1392. Asterosporium Hoffmanni. M. & N. "Star-spored Fungus."

Stroma floccose or grumous; spores stellate, septate, brownish, or slightly coloured.—*Moug. exs. no. 669. Fres. t. 5, f. 10-13. Curr. Micr. Jour. iv. t. 11, f. 1-9. Stilbospora asterosperma, Pers. Syn. p. 96. Hoffm. F.G. ii. t. 13, f. 3. Fr. S.M. iii. p. 484. Eng. Fl. v. p. 356. Cooke exs. no. 211. Fckl. exs. no. 81.*

On twigs of beech. Common.

[Mid. Carolina.]

Easily known by the stellate spores.

(Fig. 181.)

Gen. 144.

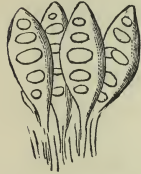
CORYNEUM, Kunze.

Fig. 182.

On beech twigs.

Spores '0065 in. (E.C.) This is said to be the Conidia of *Melogramma oligospora*.

1393. Coryneum macrosporum.*Berk.* "Large-spored Coryneum."

Disc slightly depressed; spores fusiform 7-12 septate, pellucid above, greatly elongated, and curved back.—*Eng. Fl.* v. p. 355. *Rabh. F.E.* no. 75. *Sporidesmium vermiforme.* *Fres.* ii. t. 6, f. 56-58.

1394. Coryneum pulvinatum. *Kze.* "Pulvinate Coryneum."]

Disc sub-rotund, pulvinate, convex, spores oblong, obtuse, brown; sporophores cylindrical.—*Kunze. M. H.* i. t. 2, f. 19. *Moug. exs.* no. 574. *Eng. Fl.* v. p. 355. *Fr. S.M.* iii. p. 474. *Fckl. exs.* no. 1654. *Bon. t.* 12, f. 240.

On dead sycamore.

[Mid. Carolina.]

Spores '003 in.

1395. Coryneum disciforme. *Kze.* "Discoïd Coryneum."

Pustules disc-like, flattened; spores clavate, sporophores attenuated.—*Kunze. M. H.* i. p. 76, f. 18. *B. & Br. Ann. N.H.* no. 450. *Pay. f.* 356. *Bisch. f.* 3893. *Cooke exs.* no. 351. *Rabh. F.E.* no. 278. *Bon. t.* 12, f. 239.

On dead birch.

var. β. ellipticum. *B. & Br.* Bursting transversely through the bark, large, elliptic, pulvinate; stroma thick white, black towards the edges, consisting of closely packed elongated cells; spores fusiform, multiseptate, articulations slightly constricted; endochromes granular, containing generally two transversely arranged globules.—*Ann. N.H.* no. 450.

On trunks of birch. King's Cliffe.

1396. *Coryneum compactum*. B. & Br. "Compact Coryneum."

Minute, at first covered, at length exposed; spores broadly fusiform, slightly obtuse, nuclei concatenate.—*Ann. N.H. no. 449.*

On dead twigs of elm. March. Wraxall.

[Upper Carolina, U.S.]

Forming minute scattered pustules, at first quite covered by the cuticle, at length exposed; stroma convex, spores pedunculate, widely fusiform, slightly obtuse, 4-5 septate, nuclei large, connected with one another.—*B. & Br.*

1397. *Coryneum Kunzei*. Corda. "Kunze's Coryneum."

Erumpent, disciform, black, stroma placentaform, brown within; spores fusiform, acute at each end, septate, brown, with a terminal, colourless apiculus.—*Corda. Icon. iv. f. 131. Kl. exs. no. 1360, ii. no. 779. Berk. exs. no.*

On dead oak twigs.

Spores '0025-'003 in. (E.C.) The sporophores are very persistent and long.

1398. *Coryneum microstictum*. B. & Br. "Small-spored Coryneum."

Covered; stroma obsolete; spores minute, shortly lanceolate, 2-3 septate.—*B. & Br. Ann. N.H. no. 451. Sporocadus rosæola. Rabh. exs. no. 1166.*

On dead twigs of rose, vine, *Kerria*, &c.

Scattered over the twigs, and always concealed beneath the cuticle, which cracks in the centre of each little pustule; stroma obsolete; sporophores elongated; spores minute, brown, shortly lanceolate, with two or three septa. This has much the habit of a *Hendersonia*, but there are no perithecia.—*B. & Br.*

1399. *Coryneum macrospermum*. B. & Br. "Naked Coryneum."

Stroma minute, pulvinate; flocci forked above; spores sub-cylindrical, 4-5 septate, extreme articulations hyaline.—*B. & Br. Ann. N.H. no. 941, t. 15, f. 12. Didymosporium macrospermum Corda. vi. f. 17. Fckl. exs. no. 83.*

On elm poles. Jan. Batheaston.

Forming little scattered spots on the surface of the wood; stroma cellular; thread cylindrical, equal, forked above.

1400. *Coryneum umbonatum*. Tul. "Umbonate Coryneum."

Erumpent, black, disciform, umbonate in the centre; stroma cellular, brown; spores oblong, on slender sporophores.—*Tul.*

Carp. ii. t. xv. f. 9. *Corda. Anl. t. G. f.* 69, no. 11-13. *Bisch. f.* 3859. *Nees. ii. f.* 31. *Corda. Icon. iii. f.* 92. *Steganosporum elevatum.* *Reiss. Bot. Zeit.* 1853, t. 3, f. 24-27. *Fckl. exs. no.* 95. *Kl. exs. no.* 1853.

On oak twigs.

Conidiiferous condition of *Melanconis umbonata* Tul. The spores are very broadly fusiform on slender sporophores, the endochrome divided into four or five transversely elliptical portions, scarcely coloured .0017- .002 in. (Fig. 182.)

Gen. 145.

PESTALOZZIA, De Not.

Spores septate, seated on a long peduncle, crested above.—*Berk. Outl.* p. 324. (Fig. 183.)



Fig. 183.

1401. *Pestalozzia Guepini.* *Desm.*
"Camellia Pestalozzia."

Amphigenous, black, scattered ; spores fusiform, pedicellate, hyaline at each extremity, 3-4 septate ; crowned with 3-4 very slender, hyaline, divergent setæ.—*Desm. exs. no.*

1084. *Ann. Sc. Nat.* 1840, xiii. p. 182. *Corda. Anl. t. F. f.* 58, no. 8, 9, t. 4, f. 1-3. *Fckl. exs. no.* 522. *Pay. f.* 361.

On *Camellia* leaves.

[Low. & Mid. Carolina.]

(Fig. 183.)

1402. *Pestalozzia funerea.* *Desm.* "Cypress Pestalozzia."

Pustules black, scattered, erumpent. Spores fusiform, shortly pedicellate, hyaline at each extremity, 4-septate, crowned above with 3-5 filiform hyaline, short, straight, divergent appendages.—*Desm. Ann. des Sc. Nat.* 1843, xix. p. 335.

On twigs and branches of cypress. (Dr. J. Lampray.)

1403. *Pestalozzia lignicola.* *Cooke.* "Wood Pestalozzia."

Perithecia semi-immersed, laterally compressed, black ; ostiola elongated from lateral pressure ; spores cylindrical, obtuse, tri-septate, the cell at each end hyaline, intermediate cells brown ; setæ 2-4 hyaline, simple ; sporophores very long.

On chips. Shere.

This has the appearance of a Lophiostomous *Sphaeria*, and is quite distinct from anything we find described.

Gen. 146.

CHEIROSPORA, Fr.

Fig. 184.

Spores collected in bundles at the tip of hyaline, filiform sporophores, forming monili-form threads.—*Berk. Outl. p. 325.* (Fig. 184.)

1404. Cheirospora botryospora. Fr. "Cluster-spored Cheirospora."

Gregarious, punctiform, black, opaque, oozing when moist in a tremelloid mass; stroma hyaline, gelatinous; sporophores dichotomous or branched; spores minute, oblong, collected in subglobose heads at the tips of the sporophores.—*Fr. S.V.S. p. 499. B. & Br. Ann. N.H. no. 441*. Hyperomyxa stilbosporoides. Corda. iii. f. 89. Stilbospora botryospora. Mont. Ann. Sc. Nat. 1837, t. 18, f. 5. Myriocephalum. Fekl. exs. no. 96-97. Curr. Micr. Journ. iv. t. 11, f. 1-9. De Not. Micr. Ital. iii. t. 10. Fres. Beitr. t. 5, f. 1-9.*

On beach and ivy twigs. Common.

There appears to be no specific difference between the form on beech twigs and that on ivy. (Fig. 184.)

Gen. 147.

NEMASPORA, P.

Spores coloured, oozing out in large tendrils; spores of two kinds, some minute, others filiform, with a strong curvature.—*Berk. Outl. p. 325. Eng. Fl. v. p. 355.*

These species are only conditions of Sphaeriaceous fungi.

1405. Nemasporea crocea. P. "Orange Nemasporea."

Nucleus pallid, spores (at length) curved, very slender, orange.—*Pers. Syn. p. 109. Eng. Fl. v. p. 355. Fries. exs. no. 107. Moug. exs. no. 177. Desm. Ann. Sc. Nat. xix. t. 5, f. 3. Sphaeria profusa. Sow. t. 377. Libertella faginea. Desm. Ann.*

Sc. Nat. xix. t. 5, f. 5. *Cooke exs.* no. 212. *Fckl. exs.* no. 634.
Corda. Icon. i. t. 6-7. *Fres. t.* 4, f. 35-39. *Bisch. f.* 3885.

On beech trunks. Common. [United States.]

In an imperfect state it is a mere gelatinous mass of minute globose conidia. The perfect spores are strongly curved.—*M. J. B.*

1406. *Nemaspora rosæ.* *Desm.* "Rose *Nemaspora*."

Spores curved into a semi-circle, very slender, orange.—*Fr. S.M.* iii. p. 479. *Eng. Fl.* v. p. 356. *Libertella rosæ.* *Desm. Ann. Sc. Nat.* xix. t. 5, f. 6.

On rose and lilac.

Gen. 148. *MYXOSPORIUM*, De Not.

Spores coloured, minute, of one kind, forming tendrils.—*Berk. Outl.* p. 325.

1407. *Myxosporium orbiculare.* *Berk.* "Orbicular *Myxosporium*."

Spores very minute, oblong, pale vinous red, discharged in slender tendrils.—*Berk. Outl.* p. 325. *Cytispora orbicularis.* *Berk. Ann. N.H.* no. 106, t. 7, f. 6.

On gourds.

Forming orbicular patches. In a vertical section there is an appearance of perithecia, but in the horizontal section this is scarcely observable; in general confluent, with one or two orifices to each group.

MYXOSPORIUM COLLICULOSUM. *Berk.* (*Sow. t.* 409) is evidently nothing more than the spermogonia of *Ræstelia cancellata*.

MYXOSPORIUM PARADOXUM. De Not. according to Tulasne, is the pycnidia of *Trochila craterium*.

Gen. 149. *GLÆOSPORIUM*, Mont.



Spores hyaline, simple, of one kind, oozing out in the form of tendrils.—*Berk. Outl.* p. 325. (*Fig.* 185.)

Fig. 185.

1408. Glæosporium concentricum. *B. & Br.* "Concentric Glæosporium."

Minute, white, disposed concentrically; spores numerous, cylindrical, truncate, pellucid, oozing out and forming little heaps.—*B. & Br. Ann. N.H. no. 441. Cylandrosporium concentricum, Grev. t. 27. Uredo cylandrospora. Eng. Fl. v. p. 384.*

On living cabbage leaves.

Spores produced beneath the cuticle, and forming little heaps by oozing out, as in other species.

1409. Glæosporium labes. *B. & Br.* "Poplar-leaf Glæosporium."

Spots indefinite, brown; spores sub-pyriform, obsoletely uni-septate, sub-cirrhose.—*B. & Br. Ann. N.H. no. 440. Asteroma labes. Berk. exs. no. 346. Ann. N.H. no. 203, t. 11, f. 6.*

On living poplar leaves. Jul.

Forming irregular brown patches, scattered or occupying almost the whole of the upper surface of the leaf, the stroma when held up to the light is found to be disposed in a fibrillose form; spores forming short tendrils, sub-pyriform, with an obscure septum (not always visible) at the contracted part of the spore. The spores in the fresh plant show little granules, generally disposed in two patches.—*M. J. B.*

1410. Glæosporium læticolor. "Salmon-coloured Glæosporium."

Spots depressed, centre white, with a black ring, pustules circling, tendrils pale red, spores oblong, the endochrome retracted at either end.—*Berk. Gard. Chron. 1859, pp. 604.*

On peaches and nectarines.

At first appearing as dark specks with a bleached centre, at length the white spot and dark ring become more clearly defined, seated in the centre of a regular circular depression, the borders of which are pale. The whole surface of the depression studded with little salmon-coloured warts, disposed more or less in circles, from which issue little curled tendrils of salmon-coloured spores; spores oblong $\frac{1}{1500}$ in. long, with their contents retracted to either end.

1411. Glæosporium fructigenum. "Fruit Glæosporium."

Pustules concentric, of two forms, one opening in a stellate manner, with apical spores, the other opening by a pore, with the spores forming a gelatinous tendril.—*Berk. Gard. Chron. 1856, pp. 245, fig.*

On apples.

Studding the fruit with pearl-like specks, bursting through the cuticle, and swelling above it in the form of little flat cushions. Sometimes single, more frequently surrounded by a more or less perfect ring. Each plant

consists of a branched inosculating mycelium, giving rise to simple or forked subfastigiate, irregular threads, each tip surmounted by an oblong, curved, or irregular spore (.001 in.) m.m. long. Afterwards the cuticle is raised in little shining transparent pustules, and a tendril of minute spores, precisely like the previous ones, issues from them. (*Fig.* 185.)

1412. *Glæosporium umbrinellum.* *B. & Br.* "Little brown *Glæosporium.*"

Spots irregular, angular, brown; spores pallid.—*B. & Br. Ann. N.H.* (1866), no. 1144, t. 3, f. 5.

On fallen oak leaves. Oct. Batheaston.

Forming minute brown spots; spores binucleate, .0004-.0006 in. (.01-.015 m.m.) long, supported on long, often forked sporophores, at length oozing out in the form of a pale irregular tendril.—*B. & Br.*

1413. *Glæosporium ficariæ.* *Berk.* "Pilewort *Glæosporium.*"

White; spores irregularly oblong, slightly curved.—*Cylindrosporium ficariæ*, *Berk. exs. no. 212. Ann. N.H. no. 135.*

On *Ranunculus ficaria*. Common.

Oozing out in tendrils, and forming irregular white patches on the green leaves.

Order XIV. TORULACEI.

Perithecium altogether wanting. Fructifying surface naked. Spores compound, or arising from repeated division (tomiparous), very rarely reduced to a single cell.—*Berk. Outl. p. 325.*

Spores tomiparous

Simple

Flocci straight *Torula.*

Flocci concentric *Speira.*

Didymous *Bispora.*

Multiseptate.

not enclosed *Septonema.*

at first enclosed in the flocci *Sporochisma.*

Spores radiating, multiseptate *Bactridium.*

Spores spirally involute, articulated *Helicosporium.*

Spores irregular, multicellular

conglutinate *Coniothecium.*

not conglutinate *Sporidesmium.*

Flattened, tongue shaped *Dictyosporium.*

Spores collected in fours.

Quadriarticulate crested *Tetraploa.*

Spores bilocular, epiphytal *Acalyptospora.*

Spores unicellular.

Rough, parasitic *Echinobotryum.*

Smooth, arising from the matrix *Gymnosporium.*

Gen. 150.

TORULA, Pers.

Fig. 186.

Spores tomiparous, simple.—*Berk. Outl.*
p. 326. (Fig. 186.)

1414. *Torula monilioides.* Ck. “Beaded Torula.”

Spores oblong-elliptic, flocci sub-effused, erect, aggregate, simple, jet black.—*Eng. Fl. v. p. 359. Corda, Sturm. t. 38. Bon. t. 2, f. 58.*

On sticks. Appin.

1415. *Torula ovalispora.* Berk. “Oval-spored Torula.”

Spores broadly oval, pale, minute; flocci densely aggregate.—*Eng. Fl. v. p. 359. Conopsea cinerea, Pers.*

On wood. Common.

Forms little flat, roundish, at length confluent patches, of a brownish-black hue, with sometimes a glaucous bloom externally.

1416. *Torula pulvillus.* B. & Br. “Cushion-like Torula.”

Tufts pulvinate, flocci compact, straight, branched; joints oblong, slightly constricted.—*Ann. N.H. no. 463.*

On dead twigs of oak, bursting in little tufts through the bark. March. Apethorpe.

Tufts cushion-shaped, half a line broad, compact, black; flocci straight, slightly branched, often suddenly diminishing in size, and again incrassated, consisting of numerous slightly constricted oblong joints; endochrome containing a single nucleus.—*M. J. B.*

1417. *Torula pulveracea.* Corda. “Powdery Torula.”

Tufts olivaceous-black or sooty, oblong, parallel, thick, with a blackish spurious stroma, threads of spores branched; spores oblong ovate, olive, smooth, with nuclei.—*Corda. ii. p. 8, t. 9, f. 38. Fckl. exs. no. 68. Cooke exs. no. 347.*

On fallen sticks, &c.

Forming thick oblong sooty tufts, which are often confluent in a large patch, pulverulent, and of a brown or olive-black colour, not the jet-black of many other species. The spores are more brown than olive, with usually one or two nuclei.

1418. *Torula stilbospora.* Corda. "Willow Torula."

Tufts erumpent, pulverulent, elongated, confluent, very black; flocci unequal, branched or simple, flexuous; spores sub-quadrate, sub-equal, connate, brown.—*Corda. Sturm* iii. t. 46. *Corda. Icon.* v. f. 13. *Rabh. F.E.* no. 79 & 882.

On willow branches. Batheaston, &c.

1419. *Torula abbreviata.* Corda. "Short-threaded Torula."

Tufts black, confluent; flocci abbreviated, 3-4 spored; spores very minute, globose, greyish, semi-pellucid.—*Corda. Icon.* i. f. 130.

var. β. sphæriæformis. *B. & Br. Ann. N.H.* no. 464.

On decorticated branches of *Pinus sylvestris*. Wraxall.

Instead of being widely diffused, this variety presents little sphæria-like tufts, and has a highly developed hyphasma, consisting of forked threads, at the apices of which the short chains of spores are fixed.—*B. & Br.*

1420. *Torula basicola.* B. & Br. "Creeping Torula."

Hyphasma creeping, branched, here and there rising; fertile flocci short, 5-7 articulate, fastigate; articulations not constricted, at length separating, the last very obtuse.—*Ann. N.H.* no. 465, t. 11, f. 4.

On stems of peas and *Nemophila auriculata*.

Black, effused; hyphasma here and there rising from the general mass, and giving off fascicles of short fastigate fertile threads, consisting of 5-7 articulations. Each endochrome has usually a single nucleus.—*B. & Br.*

1421. *Torula hysterioides.* Cld. "Hysterium-like Torula."

Tufts linear, abbreviated, often parallel, black; flocci erect, crowded (adherent), equal, filiform, yellowish; spores quadrangular, terete, pellucid.—*Corda. Icon.* i. f. 139. *B. & Br. Ann. N.H.* no. 751. *Rabh. F.E.* no. 282.

On poles, &c.

Easily distinguished under the microscope by the flocci having a tendency to adhere to each other, side by side.

1422. *Torula cylindrica.* Berk. "Cylindrical Torula."

Effused, threads not moniliform; spores fasciated.—*Berk. Eng. Fl.* v. p. 359.

On sticks.

Spores united four together, into short, equal, cylindrical flocci, which resemble in some states those of *Arthrimum*. It appears like a thin black wash on the bark of sticks.—*M. J. B.*

1423. *Torula herbarum*. Lk. "Herbaceous Torula."

Spores globose, green, then black; flocci aggregate, not strongly moniliform.—*Link. Sp. i. p. 128. Corda, Sturm. t. 48. Eng. Fl. v. p. 359. Cooke exs. no. 362.*

On stems of herbaceous plants, especially *Umbelliferae*. Common.
[United States.]

Forming flat sooty patches, variegated with olive-green; spores fasciated.
(*Fig. 186.*)

1424. *Torula graminis*. Desm. "Grass Torula."

Tufts very small, subrotund or oval, brownish black; flocci simple, decumbent, opaque; spores globose, deciduous.—*Desm. Ann. Sc. Nat. 1834, ii. t. 2, f. 6. Desm. exs. no. 169. B. & Br. Ann. N.H. no. 134. Fckl. exs. no. 69.*

On dry leaves of *Carices*. Colleyweston.

1425. *Torula plantaginis*. Cd. "Plantain Torula."

Hypophyllous, effused, indeterminate, tomentose, black; hyphasma creeping, filamentous, branched; flocci erect, brown, fasciculate, flexuose, simple, rarely forked; spores subquadrate, smooth, brown, nucleate.—*Corda. iii. t. 1, f. 14. B. & Br. Ann. N.H. no. 252. Kl. exs. no. 1764. Fckl. exs. no. 65.*

On leaves of Plantain. Stibbington, Hants.

"I find exactly the same barren creeping threads of a perfectly distinct structure from the torulose threads as *Corda*. I suspect that further observations will show that this fungus has distinct spores."—*M. J. B.*

1426. *Torula sporendonema*. B. & Br. "Cheese Torula."

Flocci somewhat branched, woven together into pulvinate red tufts; spores globose.—*Ann. N.H. no. 462. Rabh. F.E. no. 849. Sporendonema casei, Desm. Ann. Sc. Nat. xi. p. 246. Moug. exs. no. 998. Eng. Fl. v. p. 350. Bull. t. 504, f. 2.*

On cheese and rat's dung.

This has exactly the structure of *Torula*, and certainly has not the spores contained in a tube.—*M. J. B.* We have also found it on old and decaying glue.

TORULA ERIOPHORI. *Berk.* is *Gonatosporium puccinioides*. See *Ann. N.H. no. 236, 519.*

SPORENDONEMA MUSCÆ. *Fr. Empusa muscæ. Cohn.* See *Saprolegniei.*

Gen. 151.

SPEIRA, Corda.

Fig. 187.

Flocci concentric, at first connate, forming plates, at length breaking up. Spores simple. Stroma none.—*Corda. Icon. i. p. 9.*

(Fig. 187.)

1427. Speira toruloides. Corda. "Torula-like Speira."

Tufts irregular, elongated, brown; threads connate in laminæ; spores quadrangular, yellowish, pellucid.—*Corda. Icon. i. f. 140. B. & Br. Ann. N.H. no. 1041. Pay. f. 295. Corda. Anl. t. B. f. 5. 7.*

On dead herbaceous plants. Batheaston. (Fig. 187.)

Gen. 152.

BACTRIDIMUM, Kunze.

Fig. 188.

Spores radiating, coloured or hyaline, oblong, multiseptate.—*Berk. Outl. p. 326. (Fig. 188.)*

1428. Bactridium flavum. Kze.
"Yellow Bactridium."

Tufts irregular, usually subglobose, compact, yellow; spores oblong-ovate, obtuse; hyphasma somewhat branched, sparingly septate.—*Kze. M.H. i. t. 1, f. 2. Bon. t. 2, f. 47. Berk. exs. no. 327. Rabh. F.E. no. 372.*

On elm stumps.

[United States.]

(Fig. 188.)

1429. Bactridium helvellæ. B. & Br. "Parasitic Bactridium."

Tufts confluent, very thin, microscopical, effused; flocci somewhat erect, branched sparingly; spores clavate, or clavately pear-shaped, 2—at length 6-7 septate, colourless.—*B. & Br. Ann. N.H. no. 816, t. 9, f. 3. Didymaria helvellæ. Corda. vi. f. 24.*

On the hymenium of *Pezizæ*. Dec. Batheaston.

Spores at length 5-7 septate, .0025 in. long. Corda's figure represents the early stage of growth; at length it acquires several septa.

1430. Bactridium atrovirens. *B.* "Black-green Bactridium."

Flocci forked, pellucid; spores lanceolate, 1-2 septate, dark-green.—*Eng. Fl.* v. p. 350.

On stumps. Winter. Apethorpe.

Forming a thin, dark, black-green, minutely granulated stratum; flocci white, so slender and transparent as to be seen only with some difficulty; spores lanceolate, with one or more, frequently two, septa.—*M. J. B.*

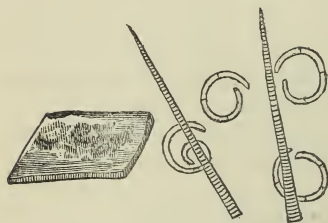
Gen. 153.**HELICOSPORIUM, Nees.**

Fig. 189.

Parasitical; spores filiform, articulated, spirally involute.—*Berk. Outl.* pp. 326. *Eng. Fl.* v. pp. 335. (*Fig.* 189.)

1431. Helicosporium vegetum. *Nees.* "Oak Helicosporium."

Flocci black; distant, subulate, spores pale greenish, spiral, septate, pellucid.—*Nees. f.* 69. *Berk. Ann. N.H.* no. 229. *Kl. exs.* no. 1433. *Corda. Sturm.* t. 16.

On decayed oak branches, &c. Rockingham Forest.

(*Fig.* 189.)

1432. Helicosporium pulvinatum. *Fr.* 'Pulvinate Helicosporium.'

Threads cæspitoso-pulvinate, very slender, branched, septate at their apices; spores yellow green.—*Fr. S.M.* iii. p. 354. *Eng. Fl.* v. p. 335. *Helicotrichum pulvinatum.* *Nees. f.* 15.

var. β. effusum. Effused, very thin, spores whitish.—*Berk. Eng. Fl.* v. p. 335.

On old chips, &c.

Forming a very thin black stratum, following the inequalities of the wood; flocci branched; branches patent, articulated; articulations about as long as broad; apices pointed, pellucid, terminated by the minute closely involute, extremely fugacious spores, which consist of about three volutions, and as many articulations, volutions at first so close that the spores appear globose, and their true nature might easily be overlooked.—*M. J. B.*

Gen. 154.

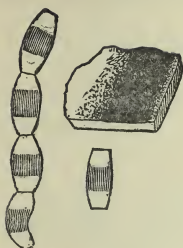
BISPORA, Corda.

Fig. 190.

Flocci tomiparous, moniliform, composed of didymous spores.—*Berk. Outl. p. 326.* (Fig. 190.)

1433. Bispora monilioides. Cd.
"Beaded Bispora."

Flocci aggregate; spores oval, obtuse, barrel-shaped.—*Corda, Icon. i. f. 143. Fres. t. 3, f. 46-54. Torula antennata. Pers. M.E. i. p. 21. Berk. exs. no. 215. Eng. Fl. v. p. 359. Monilia antennata.*

Grev. t. 255. Fckl. exs. no. 74. Cooke exs. no. 346.

On old stumps. Common. [Mid. Carolina.]

Forming intense black velvety patches on the cut surface of stumps, chips, &c. (Fig. 190.)

Gen. 155.

SEPTONEMA, Corda.

Fig. 191.

Flocci tomiparous, moniliform, composed of multiseptate spores.—*Berk. Outl. p. 327.* (Fig. 191.)

1434. Septonema spilomeum. Berk. "Point-like Septonema."

Sori small, punctiform; threads branched; articulations oblongo-elliptic, rather rough, triseptate.—*Berk. Hook. Journ. 1845, iv. p. 310, t. 12, f. 5. B. & Br. Ann. N.H. no. 466.*

On old fence rails. Guernsey. [U. Carolina, Ohio.]

Forming little scattered sori about the size of a poppy seed; threads branched, articulations oblongo-elliptic, triseptate, one or more of the septa occasionally containing an oil globule, border of articulations pellucid, rough with little scabrous prominences. Very distinct in the punctiform habit, and in the nature of the articulations.—*M. J. B.* (Fig. 191.)

1435. Septonema irregulare. B. & Br. "Irregular Septonema."

Effused, thin black, irregular; spores oblong.—*B. & Br. Ann. N.H. no. 942, t. 15, f. 13.*

On living apple twigs. Apethorpe.

Forming a very thin, cloud-like, black stratum; very irregular, sometimes exhibiting continuous threads under the microscope, sometimes distinct, spores '0007-'0001 in. long.

1436. *Septonema elongatispora.* Preuss. "Long-spored *Septonema*."

Tufts effused, whitish; flocci erect, branched; spores sub-cylindrical, apiculate, variable in length, 1-2 septate, pellucid, colourless.—*Sturm. vi. p. 72, t. 36. B. & Br. Ann. N.H. no. 1059.*

On nettle stems. Oct. Batheaston.

1437. *Septonema concentricum.* B. & Br. "Concentric *Septonema*."

Sessile, superficial, scattered or confluent, orbicular, at first entirely white, then the centre or disc ochraceous; flocci concatenate, radiating from the pulvinate, compact, fibrous, pallid stroma; spores straight, continuous, white, of two kinds.—*Rabh. F.E. no. 777.*

On pine and larch chips. Dec.

Tufts '01-'035 in. broad. Spores '0007 × '00015 in. mixed with others '001 × '0003 in.—*B. & Br.*

Gen. 156. *SPOROCHISMA*, B. & Br.

Flocci erect, simple; outer membrane tough, inarticulate; endochrome at length emergent, breaking up into quadrisepate spores.—*Berk. Outl. p. 327. Ann. N.H. no. 467. (Fig. 192.)*

The affinities of this genus are clearly with *Torula*, the circumstance of the endosporous mode of fructification being apparent rather than real. The outer membrane is very tough, and does not break up into separate portions with the spore. It is, in fact, a *Septonema* enclosed in an additional membrane—*M. J. B.*

1438. *Sporochisma mirabile.* B. & Br. "Curious *Sporochisma*."

Effused, black, velvety; flocci erect, simple; endochrome breaking up into cylindrical, quadri-articulate spores.—*Gard. Chron. 1847, p. 540. Ann. N.H. no. 467. Berk. Intr. f. 74a. Fres. t. 6, f. 26-28.*

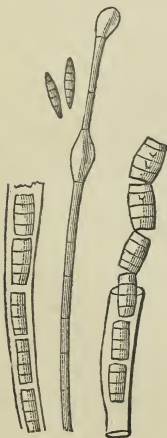


Fig. 192.

On beech.

Forming a black velvety stratum; flocci erect, simple, tapering towards the base; external membrane tough, inarticulate; endochrome breaking up into cylindrical quadri-articulate spores, at length escaping from the ruptured thread, each joint having frequently a single nucleus.—*B. & Br.* (Fig. 192.)

Gen. 157.

SPORIDESMIUM, Link.



Fig. 193.

Spores mostly irregular, pluricellular, springing immediately from the obscure mycelium, rarely borne upon a distinct peduncle, more rarely unisepate.—*Berk. Outl.* p. 327.

(Fig. 193.)

1439. *Sporidesmium polymorphum.* Corda. “Many-shaped *Sporidesmium.*”

Tufts black, effused, powdery, opaque; spores pedicellate, oblong, black-brown, opaque, cellular; peduncle filiform, septate, or irregularly cellulose, brown.—*Corda. Icon. i. f. 119. B. & Br. Ann. N.H. no. 452.*

On decaying oak. Feb. Wraxall.

Remarkable for its closely septate peduncle.

(Fig. 193.)

1440. *Sporidesmium alternariæ.* Cooke. “Paper *Sporidesmium.*”

Tufts irregular, dendritic, bright dark brown; hyphasma creeping, profuse, filiform, hyaline, branched, sparsely septate; spores irregular, ovate, sub-pyriform, or cylindrical, one or more septate, with transverse divisions, brown.—*Sporidesmium polymorphum var. chartarum. Cooke exs. no. 329.*

On varnished wall paper. Jan.—May.

This can scarcely be a form of *S. polymorphum* from the nature of the peduncles; the hyphasma is too much developed for a good *Sporidesmium*. I am disposed to regard it as a condition of *Alternaria chartarum*. Preuss. (Sturm. vi. t. 49.) Mr Broome and myself have seen distinct indications of a moniliform arrangement of spores, under an inch objective, but the attachment seems so slight that we could not verify this with higher powers. Never having seen specimen or description of *Sporidesmium chartarum*, B. & C. (from Mid. Carolina, U.S.), I cannot be certain that this is distinct. —*M. C. C.*

- 1441. *Sporidesmium antiquum.*** *Corda.* "Compact *Sporidesmium.*"

Tufts black, tomentose, very broad, irregularly expanded; spores congested, joined in fascicles, erect, polymorphous, cellulose; hyphasma rooting, branched, filamentous, cellulose, brownish.—*Corda. iii. f. 11. B. & Br. Ann. N.H. no. 453.*

var. β. compactum. *B. & Br. Ann. N.H. no. 453.*

On hard wood. *Wraxall.*

More compact than the typical form as figured by *Corda*, and composed of smaller cells.

- 1442. *Sporidesmium pyriforme.*** *Corda.* "Pear-shaped *Sporidesmium.*"

Effused, black; spores obovate, at first septate, then cellulose, brown, semi-pellucid, 2-4 celled; peduncle hyaline, colourless, short or elongated, and filiform, flaccid.—*Corda. i. f. 116. B. & Br. Ann. N.H. no. 454.*

On decayed boards. *July. Shropshire.*

It forms a thick crust-like stratum.

- 1443. *Sporidesmium melanopum.*** *B. & Br.* "Black-patch *Sporidesmium.*"

Spores subglobose, supported by a cellular base, forming a stratum with the crowded tufts.—*Ann. N.H. no. 455. Spiloma melanopum, Ach. Meth. t. i. f. 3. Eng. Bot. (2nd ed.), t. 2358.*

On bark of apple trees. *Common. [Up. Carolina.]*

Forming broad black patches, made up of many smaller spots, spores subglobose, very opaque, apparently simple, but really composed of numerous cells, supported by a cellular base, which varies much in length and breadth.

- 1444. *Sporidesmium scutellare.*** *B. & Br.* "Scutellate *Sporidesmium.*"

Sori scutellæform; spores broadly obovate, cellular; supported by a short cellular base.—*B. & Br. Ann. N.H. no. 456.*

On larch bark.

Sori scattered, minute, scutelliform; spores obovate, evidently cellular, springing from a cellular stroma, and supported by a few variously arranged cells, which are sometimes reduced to merely one.—*B. & Br.*

- 1445. *Sporidesmium lepraria.*** *B. & Br.* "Black *Sporidesmium.*"

Spots effused, very black; spores irregular, without any distinct base.—*Berk. Hook. Journ. 1853, p. 43. t. 3, f. 9. Berk. Intr.*

f. 18a. Ann. N.H. no. 750. Lepraria nigra, Eng. Bot. (2nd ed.), t. 2409. Coniothecium effusum, Corda. i. f. 21. B. & Br. Ann. N.H. no. 459.

On exposed planks and rails. Common. [Carolina, U.S.]

Forming broad black persistent patches, sometimes it occurs in distinct black specks, which wear the appearance of little oblong perithecia. The spores are extremely irregular, of no definite shape, and without any distinct base.

1446. Sporidesmium uniseptatum. *B. & Br.* "Two-celled Sporidesmium."

Spores obovate, uniseptate, shortly pedicellate, cæspitose; lower articulation shorter.—*B. & Br. Ann. N.H. no. 815, t. 9, f. 2.*

On *Clematis vitalba*. Jan. Batheaston.

Forming minute dark specks, consisting of obovate, uniseptate, shortly pedicellate spores, (.0005 in.) .0127 m.m. long, the lower articulation of which is much the shorter and narrower. As seen by transmitted light they have a slight vinous tinge.—*B. & Br.*

1447. Sporidesmium opacum. *Corda.* "Opaque Sporidesmium."

Somewhat effused, irregular, very black, opaque; spores very shortly pedicellate, polymorphous, oblong, cuneate, ovate, or elliptical, 2-4 celled, at first brown pellucid, then black, opaque; peduncle colourless.—*Corda. i. f. 115. B. & Br. Ann. N.H. no. 1145, t. 3, f. 6.*

On stumps of Wyche elm. Mar. St. Catherine's.

When young forming small round cinereous tufts, sparingly scattered over the wood.—*B. & Br.*

1448. Sporidesmium lobatum. *B. & Br.* "Lobed Sporidesmium."

Stem articulated, hyaline below, divided above in subquaternate, subglobose articulations.—*B. & Br. Ann. N.H. (1866), no. 1146, t. 3, f. 7.*

On fir sticks. April. Lucknam.

Forming minute black, pulvinate tufts. At first simple and strongly swollen above. The upper articulation then divides, and ultimately gives off the spores, which are (.0006 in.) .015 m.m. long. The whole plant is .001 in. high.

1449. Sporidesmium abruptum. *B. & Br.* "Abrupt Sporidesmium."

Pulvinate, very shortly stipitate, confluent with the spores, which are oblong, septate, with unequal articulations.—*B. & Br. Ann. N.H. no. 1042, t. 14, f. 8.*

On dead wood. March.

Forming little pulvinate tufts, externally resembling a villous *Sphæria*. Spores oblongo-clavate, confluent with the stem, septate, the lower articulation and the uppermost short, the second from the top very long. Spores (0025×0006 in.) 06×015 m.m.

SPORIDESMIUM FUNGORUM. *Berk.* See *Sphæria epochnum*, *B. & Br.*

Gen. 158. CONIOTHECIUM, Corda.

At length naked; spores multicellular, irregular, conglomerate.—*Berk. Outl. p. 327.*

Neither of the British species are autonomous.

CONIOTHECIUM AMENTACEARUM, *Corda.* a condition of *Valsa salicina*, *Fr.*

CONIOTHECIUM BETULINUM, *Corda.* a condition of *Diatrype lanciformis*, *Fr.*

Gen. 159. DICTYOSPORIUM, Corda.



Spores linguæform, erect, plane, cellular; cells sub-concentric.—*Berk. Outl. p. 328.*
(*Fig. 194.*)

Fig. 194.

1450. Dictyosporium elegans. *Corda.* "Elegant Dictyosporium."

Tufts black, effused; spores tongue-shaped, acute above, or rounded, rarely contracted in the middle, base then attenuated or cordate; cells diaphanous, yellowish, walls becoming thickened, brownish or black.—*Corda. ii. f. 29. B. & Br. Ann. N.H. no. 458. Pay. f. 255. Corda. Anl. t. B. f. 4, no. 7-9.*

On barked oak trees. Feb. Somerset. [*Low. Carolina.*]

(*Fig. 194.*)

Gen. 160.

TETRAPLOA, B. & Br.

Fig. 195.

Spores mostly quadri-articulate growing together in fours, and each crowned with a jointed bristle.—*Berk. Outl. p. 328. Ann. N.H. no. 457.* (Fig. 195.)

This genus is represented by one species, which is so rare that no opportunity has occurred of watching its growth. It appears to be a kind of compound *Sporidesmium*.

1451. Tetraploa aristata. B. & Br. "Bearded Tetraploa."

Stratum olive-black; spores oblong, quadriarticulate, connate in fours, each with an articulate seta of the same length.—*B. & Br. Ann. N.H. no. 457, t. 11, f. 6.*

On grass. King's Cliffe.

Forming a thin olive-black stratum, consisting of generally quadriarticulate oblong spores, growing four together and perfectly connate, each crowned with an articulate seta as long as itself. The quadriaristate bodies may either be regarded as made up of four spores or as spores formed of four parallel rows of cells, each row being terminated by a bristle.—*B. & Br. (Fig. 195.)*

Gen. 161.

ECHINOBOTRYUM, Corda.

Fig. 196.

Parasitical; spores unicellular, stellato-fasciculate, ovate, acuminate, rough.—*Berk. Outl. p. 328.* (Fig. 196.)

1452. Echinobotryum atrum. Corda.
"Black Echinobotryum."

Tufts at first stellate, then irregularly expanded, black; spores fawn coloured, ovate-oblong, narrowed at the base, warted, warts produced above into long obtuse points, which are brown.—*Corda. Sturm. i. t. 26. Bon. t. 10, f. 218d. Corda. Icon. iii. f. 6. B. & Br. Ann. N.H. no. 124,*

457*. *Corda. Anl. t. B. f. 3, no. 5, 6, 7. Kl. exs. no. 1585.*

Parasitic on black moulds (*Pachnocybe*.) Milton. King's Cliffe.

The spores have the appearance of fascicles of minute perithecia. (Fig. 196.)

Gen. 162.

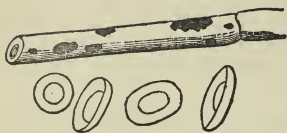
GYMNOSPORIUM, Corda.

Fig. 197.

Mycelium very obscure ; spores unicellular, arising apparently from the matrix.—*Berk. Outl.* p. 328.

(Fig. 197.)

1453. *Gymnosporium arundinis.* Corda. “Reed Gymnosporium.”

Immersed, then naked, livid ; spores oval, lens-shaped, or rounded, margin depressed, diaphanous, livid-yellow ; nucleus obovate or globose, brownish.—*Corda. Icon.* ii. f. 1. *Berk. Outl.* p. 328. *Corda. Anl. t. B. f.* 3. no. 8-11. *Curr. Micr. Journ.* 1857, t. 8, f. 35-37.

On reeds.

(Fig. 197.)

Gen. 163.

ACALYPTOSPORA, Desm.

Fig. 198.

Spores epiphytal, superficially innate, didymous, stipitate, not collected in heaps ; stroma none.—*Desm. Ann. S.N.* 1848, x. p. 342.

(Fig. 198.)

By some authors this genus is included in *Puccinieæ* ; it is clearly intermediate between *Torulaceæ* and *Puccinieæ*, but, as it appears to us, more closely allied to the former than the latter.

1454. *Acalyptospora nervisequia.* Desm. “Nerve Acalyptospora.”

On both surfaces ; spores seriate along the nerves, red-brown, shining, ovoid or oblong, obtuse, scarcely constricted ; episporium smooth ; stem thick, rather long, fragile, colourless.—*Desm. Ann. Sc. Nat.* 1848, x. p. 343. *Ann. N.H.* no. 1043.

On living and dead leaves of elm.

Looking like a short, obtuse *Puccinia* with one to three septa, and a short pellucid stem. In every stage of growth free. It closely resembles a gland.—*B. & Br.*

(Fig. 198.)

Order XV. PUCCINIÆI.

Parasitic on living plants; peridium none; spores mostly of two kinds (1) simple, (2) septate, the latter producing on germination secondary spores.—*Berk. Outl. p. 328.*

a. Spores stipitate.

Spores multiseptate.					
moniliform	.	.	.	.	<i>Xenodochus.</i>
cylindrical	;	:	:	:	<i>Phragmidium.</i>
biseptate	.	.	.	.	<i>Triphragmium.</i>
uniseptate	.	.	.	.	<i>Puccinia.</i>

b. Spores immersed in gelatine.

Stroma tremelloid and expanded	.	.	.	<i>Gymnosporangium.</i>
clavate or club-shaped	.	.	.	<i>Podisoma.</i>

Gen. 164.

XENODOCHUS, Schlecht.

Spores multiseptate, moniliform, breaking up into many distinct articulations.—*Berk. Outl. p. 328.*
(*Fig. 199.*)

1455. **Xenodochus carbonarius.** *Schl.*
 " Burnet chain brand."

UREDOSPORES. Effused, or subrotund; spores sub-globose, orange-vermilion.—*Uredo miniata. Pers. Syn. p. 216. Lecythea miniata. Lev. Ann. Sc. Nat. viii. p. 374.*

BRAND-SPORES. Scattered in small tufts, hyogenous; spores curved or straight, composed of from five to fifteen articulations; obtuse at one extremity, slightly attenuate at the other.—*Linn.*

Fig. 199.
i. p. 237, t. 3, f. 3. *Cooke M.F. t. iii. f. 29. Ann. N.H. no. 133. Curr. Micr. Journ. v. t. 8, f. 34. Bisch. f. 3866. Berk. exs. no. 328. Fckl. exs. no. 410.*

On living burnet leaves. Rare.

(*Fig. 199, spore magnified.*)



Gen. 165.

PHRAGMIDIUM, Link.

Fig. 200.

Spores cylindrical, multisepate, scarcely moniliform, borne on a long peduncle.—*Link. Sp. ii. p. 84. Aregma. Berk. Outl. p. 329. Fr. S.M. iii. p. 495. Cooke M.F. p. 195. Eng. Fl. v. p. 358. (Fig. 200.)*

1456. Phragmidium mucronatum.

Link. "Rose Brand."

URED-SPORES. Spots yellow, small, scattered; spores sub-oval, sometimes minutely pedicellate, orange.—*Lecythea rosæ. Lev. Cooke. M.F. t. iii. f. 37. Cooke exs. no. 17. Uredo rosæ. Eng. Fl. v. p. 381.*

BRAND-SPORES. Hypogenous, scattered over the leaves in minute tufts; spores 5 to 7 septate, terminal joint mucronate; peduncles incrassated below, fusiform.—*Fckl. exs. no. 313. Fl. Dan. t. 2279, f. 2. Bisch. f. 3860. Purst. t. 28. Cooke L.F. no. 3. Aregma mucronatum. Berk. Outl. p. 329. Cooke M.F. iii. f. 38. Grev. t. 15. Eng. Fl. v. p. 358. Baxt. exs. no. 37. Cooke exs. no. 17-18. Nees. f. 14. Corda. iv. f. 70.*

On living rose leaves. Autumn. Common. [Maine, U.S.]

*Chen-paigne 7-11 septate.
Fckl. 23 mpt. p 55.*

1457. Phragmidium acuminatum. Fr. "Burnet Brand."

URED-SPORES. Spots obliterated, rufous on the opposite side; sori subrotund, scattered, minute on the under surface; epidermis bursting; spores subglobose, often pedicellate, intense orange; barren spores pale, cylindrical, and slightly curved.—*Lecythea poterii. Lev. Cooke M.F. t. 3, f. 31. Cooke exs. no. 19. Uredo poterii. Eng. Fl. v. p. 385.*

BRAND-SPORES. Hypogenous, scattered in minute tufts; spores multisepate, terminal joint acuminate; peduncles equal.—*Aregma acuminatum. Fr. S.M. iii. p. 497. Cooke. M.F. t. iii. f. 32. Eng. Fl. v. p. 358. Cooke exs. no. 19. Fckl. exs. no. 312. Cooke L.F. no. 1. Phragmidium intermedium. Lk. Sp. ii. p. 84.*

On living burnet leaves. (*Poterium sanguisorba.*) July. Common.

1458. Phragmidium bulbosum. Schl. "Bramble Brand."

UREDOSPORES. Spots pale, brown or purple on the opposite side, sometimes depressed above; sori subrotund, aggregate; epidermis soon bursting; spores globose or subglobose, echinulate, bright ochraceous-yellow.—*Uredo ruborum. Eng. Fl. v. p. 382 (partly). Lecythea ruborum Lev. Cooke M.F. t. 3, f. 40. Cooke exs. no. 20.*

BRAND-SPORES. Hypogenous, with a dull red stain on the upper surface; spores in large tufts, 4-septate, terminal joint apiculate; peduncles incrassated, and bulbous at the base.—*Schlecht. Fl. Ber. p. 140. Bisch. f. 3861-3900. Bon. t. 2, f. 46. Ann. Sc. Nat. 1854, t. 9, f. 15-17. Aregma bulbosum. Fr. S.M. iii. p. 497. Eng. Fl. v. p. 358. Cooke M.F. t. 3, f. 41. Cooke L.F. no. 2. Cooke exs. no. 20. Phragmidium incrassatum. Lk. Sp. ii. p. 85. Corda. iv. f. 71. Fckl. exs. no. 314. Puccinia rubi. Sow. t. 400, f. 9. Moug. exs. no. 193. Bxt. exs. no. 33.*

On living bramble leaves. Autumn. Common.

(Fig 200.)

1459. Phragmidium gracile. Grev. "Raspberry Brand."

UREDOSPORES. Spots obliterated; sori minute, confluent, forming a small distinct ring; epidermis bursting; spores globose, and elongato-pyriform, yellow.—*Uredo gyrosa. Eng. Fl. v. p. 384. Reb. t. 3, f. 15. Lecythea gyrosa. Lev. Ann. Sc. Nat. Cooke M.F. t. 8, f. 162-164. Cooke. exs. no. 64.*

BRAND-SPORES. Hypogenous, scattered, in small tufts; spores 7-9 septate, the terminal joint apiculate; peduncles slender.—*Aregma gracile. Eng. Fl. v. p. 358. Cooke M.F. t. 3, f. 43. Cooke exs. no. 21. Phragmidium effusum. Fckl. exs. no. 316. Puccinia gracilis. Grev. Fl. Ed. p. 428. Bxt. exs. no. 39.*

On raspberry leaves. Autumn.

1460. Phragmidium obtusum. Link. "Strawberry Brand."

UREDOSPORES. Spots yellowish; sori subrotund, aggregate, often confluent; spores subglobose, orange.—*Lecythea potentillarum. Lev. Ann. Sc. Nat. viii. p. 374. Uredo potentillarum. Eng. Fl. v. p. 382 (partly). Sow. t. 398, f. 2.*

BRAND-SPORES. Hypogenous, scattered in minute tufts; spores multiseptate; terminal joint obtuse; peduncles equal.—*Link. Sp. ii. p. 84. Aregma obtusatum. Fr. S.M. iii. p. 497.*

Cooke M.F. iii. f. 35. *Cooke exs.* no. 22. *Eng. Fl.* v. p. 359. *Fckl. exs.* no. 310. *Kl. exs.* no. 679. *Berk. exs.* no. 105. *Puccinia potentillæ*. *Grev. t.* 37. *Bull. t.* 504, f. 14. *Corda.* iv. f. 72.

On leaves of barren strawberry. (*Potentilla fragariastrum*.) Autumn.

Gen. 166.

TRIPHRAGMIMUM, Link.

Fig. 201.

Spores trilocular; septa mostly vertical and horizontal.—*Berk. Outl.* p. 332.

(Fig. 202.)

1461. Triphragmium ulmariae. *Link.* "Meadow Sweet Brand."

URED-SPORES. Effused, broad, pulverulent, on leaves and petioles; spores subglobose, deep orange.—*Uromyces ulmariae*, *Lev. Cooke M.F. t.* 7, f. 147, 148. *Cooke exs.* no. 75. *Uredo ulmariae*, *Mart. Cæoma miniatum*, *Pers. Uredo effusa*, *Eng. Fl.* v. p. 381. *Grev. t.* 19. *Cooke L.F.* no. 25.

BRAND-SPORES. Spots obliterated; sori at first subrotund, covered with the epidermis; at length, when the cuticle has vanished, effuse; spores brown, subturbinate, divided by a vertical dissepiment, shortly pedicellate.—*Link. Sp. ii.* p. 84. *Cooke M.F. t.* iii. f. 48. *Cooke exs.* no. 23. *Fckl. exs.* no. 317. *Cooke L.F.* no. 4. *Corda.* iv. f. 73. *Pay. f.* 250. *Kl. exs.* no. 271, ii. 366. *Berk. exs.* no. 343. *Puccinia ulmariae*, *Eng. Fl.* v. p. 368. *Moug. exs.* no. 891.

On leaves of meadow-sweet (*Spiræa ulmaria*). Autumn. Common.

(Fig. 201, spores magnified.)

Gen. 167.

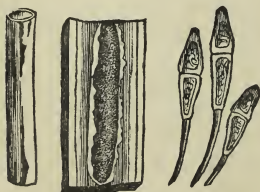
PUCCINIA, Pers.

Fig. 202.

(1) Uredo spores subglobose, (2) brand spores unispate, supported on a distinct peduncle.—*Berk. Outl.* p. 329. (Fig. 202)

It is probable that, when better known in their development and mutations, many forms now regarded as distinct species will have to be united.

1462. Puccinia graminis. Pers. "Corn mildew."

URED-SPORES. Spots yellow, heaps oval, scattered, generally on the upper surface; epidermis at length bursting longitudinally; spores subglobose, reddish-brown, easily dispersed.—*Trichobasis rubigo-vera*, Cooke *M.F.* t. 7. figs. 140, 149. Cooke *exs.* no. 24. *Uredo rubigo*, Eng. *Fl.* v. p. 375. *Uredo linearis*, Eng. *Fl.* v. p. 375.

BRAND-SPORES. Spots pale, diffuse; sori linear, confluent, amphigenous; spores at length black, clavate, very slightly constricted.—Cooke *M.F.* t. 4, f. 57-59. Pers. *Disp.* t. 3, f. 3. Moug. *exs.* no. 675. Cooke *exs.* no. 24. Corda. iv. f. 27. Fckl. *exs.* no. 319. Kl. *exs.* no. 79. Bisch. f. 3877. Bon. t. i. f. 40. Ann. Sc. Nat. (1854), t. 9, f. 1-8. *Uredo frumenti*, Sow. t. 140.

On leaves and culms of corn and grass. Autumn. Very common. [United States.]

The variety on reeds is very similar, but quite distinct from *P. arundinacea* both in habit and fruit.

1463. Puccinia arundinacea. Hedw. "Reed Brand."

URED-SPORES. Sori elliptic or linear; spores oblong or subglobose, yellowish.—*Trichobasis linearis*. Lev. Ann. Sc. Nat. ?

BRAND-SPORES. Amphigenous; sori elongated, often confluent, emersed, convex, prominent; spores brown, attenuated in both directions, constricted at the joints, apiculate, on long pedicels.—Hedw. in Duby. Bot. ii. p. 889. Corda. iv. f. 30. Cooke *Seem. Journ.* iv. p. 97. Cooke *exs.* no. 25. Fckl. *exs.* no. 320.

On reed. Common.

Differing in habit from the var. *arundinis* of *P. graminis*, the sori are larger and less numerous, and the spores very distinct.

1464. Puccinia striola. Link. "Sedge Mildew."

URED-SPORES. Spots red; sori oval, minute, scattered, surrounded by the ruptured epidermis; spores subglobose, reddish, then brown.—*Trichobasis caricina*. Cooke *M.F.* t. 8, f. 170, 171. Cooke *exs.* no. 67. Cooke *L.F.* no. 33-35, *Uredo caricina*, Eng. *Fl.* v. p. 376. Grev. t. 12.

BRAND-SPORES. Spots pallid; sori linear, crowded, distinct, subconvex; spores at length black, oblong and slightly constricted, or obovate, and not constricted.—Link. *Sp.* ii. p. 67. Desm. *exs.* no. 614. Eng. *Fl.* v. p. 363. Cooke *M.F.* p. 196. Kl. *exs.* no. 468.

On sedges, rushes, &c. Autumn. [United States.]

P. thalictri Grev.

1465. Puccinia coronata. *Corda.* "Coronated Mildew."

URED-SPORES. Uncertain.

BRAND-SPORES. Spots pallid; sori linear, short, crowded, not confluent, surrounded by the ruptured epidermis; spores shortly pedicellate, pallid; the apex surrounded by obtuse radiating teeth.—*Corda. i. f. 96. Cooke M.F. t. 4, f. 60, 69. Ann. N.H. no. 473. Sturm. t. 3. Cast. Cat. p. 202, t. 2. Cooke exs. no. 26. Fckl. exs. no. 322. Kl. exs. ii. no. 681. Ann. Sc. Nat. (1847), t. 7, f. 28.*

On various grasses.

A very neat species, on leaves of the smaller grasses. The coronated spores are very characteristic.

1466. Puccinia truncata. *B. & Br.* "Iris Brand."

URED-SPORES. Spots yellow; sori small, pale red brown, oblong, and linear, scattered or aggregate, bullate; spores globose, or broadly elliptic, pale brown.—*Uromyces iridis. Lev. Cooke M.F. p. 376. Cooke L.F. no. 28. Cooke exs. no. 77. Uredo iridis. Eng. Fl. v. p. 376. Berk. exs. no. 59.*

BRAND-SPORES. Spots obliterated; sori oblong, brown, surrounded by the scarious epidermis; spores obovate-oblong, even, attenuated below, upper cell abruptly truncate.—*B. & Br. Ann. N.H. no. 754. Cooke M.F. p. 196.*

On *Iris foetidissima*. Autumn.

We have found the Brand-spores mixed with the Uredo-spores in the same pustule.

1467. Puccinia asparagi. *D.C.* "Asparagus Brand."

URED-SPORES.

Uredo Asparagi. Lasch. Kl. exs. no. 1180. Bot. Zeit. 1848, p. 509.

BRAND-SPORES. Spots none; sori reddish-brown, generally on the stems, scattered and crowded, surrounded by the ruptured epidermis; spores oblong, obtuse, constricted; peduncle white, long, thread-like.—*D.C. Fl. Fr. ii. p. 595. Eng. Fl. v. p. 363. Cooke M.F. p. 196. Moug. exs. no. 392. Cooke exs. no. 111. Corda. Ic. iv. f. 32. Fckl. exs. no. 378. Kl. exs. no. 1181, ii. no. 680.*

On dead stems of asparagus. Autumn.

1468. Puccinia polygonorum. *Link.* "Polygonum Brand."

UREDOSPORES. Spots red-yellow, widely effused; sori subrotund, scattered, sometimes forming a ring, epidermis at length bursting; spores somewhat obovate, brown.—*Trichobasis polygonorum*. *Lev. Ann. Sc. Nat. Cooke M.F.* p. 210. *Cooke exs.* no. 27. *Berk. exs.* no. 231. *Cooke L.F.* no. 42. *Uredo polygonorum*. *Grev. t.* 80. *Eng. Fl. v.* p. 377.

BRAND-SPORES. Spots yellowish; sori minute, crowded into orbicular patches; spores brown-black, obovate-oblong, frequently constricted, with the upper joint globose.—*Link Sp.* ii. p. 69. *Eng. Fl. v.* p. 363. *Cooke M.F.* p. 197. *Cooke exs.* no. 27. *Fckl. exs.* no. 331. *Corda.* iv. f. 41-62, ii. f. 20. *Kl. exs.* no. 80, 789, 886. *Berk. exs.* no. 216. *Cooke L.F.* no. 5.

On leaves of various species of *Polygonum*. Common.

[United States.]

1469. Puccinia vaginalium. *Link.* "Knot-grass Brand."

UREDOSPORES. Uncertain.—*Uromyces Polygoni*. *Fckl?*

BRAND-SPORES. Spots none; sori hypogenous, subrotund or oblong, at first surrounded by the ruptured epidermis; spores brown, obtusely ovate; pedicels long, filiform.—*Link. Sp.* ii. p. 69. *Eng. Fl. v.* p. 363. *Cooke M.F.* p. 197.

On leaves and stems of knot-grass, (*Polygonum aviculare*.) Autumn.

1470. Puccinia thesii. *Chail.* "Bastard Toad-flax Brand."

UREDOSPORES?

BRAND-SPORES. Cauline and amphigenous; sori blackish-brown, small, roundish, or oblong, convex, scattered, or aggregate, surrounded by the ruptured epidermis; spores ovate, obtuse, scarcely constricted; pedicels elongated.—*Cooke M.F.* p. 197.

On *Thesium humifusum*. Oct.

1471. Puccinia primulæ. *Grev.* "Primrose Brand."

UREDOSPORES. Spots yellowish; sori subrotund or oval, aggregate, epidermis at length bursting; spores ovoid, brown.—*Uromyces primulæ* *Lev.* *Cooke M.F.* p. 211. *Uredo primulæ*. *Eng. Fl. v.* p. 377.

BRAND-SPORES. Hypogenous, deep brown, solitary, scattered, or concentric and subconfluent; spores obovate-oblong, slightly constricted.—*Grev. Fl. Ed. p. 432. Eng. Fl. v. p. 364. Cooke M.F. p. 197. Cooke exs. no. 28. Berk. exs. no. 350. Cooke L.F. no. 6.*

On leaves of primroses. June—Sept.

1472. Puccinia veronicarum. D.C. "Veronica Brand."

UREDOSPORES?

BRAND-SPORES. Spots yellowish; sori subglobose, aggregate, or circinating, central one large; spores brown, obovate-oblong, more or less constricted.—*D.C. Fl. Fr. ii. p. 594. Eng. Fl. v. p. 364. Cooke M.F. p. 197. Cooke exs. no. 112. Fckl. exs. no. 1547. Kl. exs. no. 1292, ii. no. 682. Cooke L.F. no. 7.*

On under surface of leaves of *Veronica*.

1473. Puccinia glechomatis. D.C. "Ground-ivy Brand."

UREDOSPORES?

BRAND-SPORES. Spots brownish; sori subrotund, scattered, hypogenous; spots brown, rather short, subelliptic, scarcely at all constricted.—*D.C. Fl. Fr. vi. p. 56. Eng. Fl. v. p. 364. Cooke M.F. t. 4, f. 73-74. Nees. f. 12. Cooke exs. no. 29. Corda. iv. f. 35. Fckl. exs. no. 329. Kl. exs. no. 272. Cooke L.F. no. 8.*

On leaves of ground-ivy, (*Glechoma hederacea*.) Sept. and Oct.

1474. Puccinia menthæ. Pers. "Mint Brand."

UREDOSPORES. Spots yellowish and brown; sori subrotund, scattered, subaggregate on the under surface; epidermis ruptured; spores subglobose, brown.—*Trichobasis labiatarum. Lev. Ann. Sc. Nat. Cooke M.F. p. 209. Cooke L.F. no. 37. Cooke exs. no. 30. Berk. exs. no. 232-233. Uredo labiatarum. D.C. Fl. Fr. vi. p. 72. Eng. Fl. v. p. 378. Sow. t. 398, f. 3.*

BRAND-SPORES. Spots obliterated; sori varying in size, hypogenous, subrotund, scattered; spores at length black, subglobose, or angular; peduncles short.—*Pers. Syn. p. 227. Eng. Fl. v. p. 364. Cooke M.F. t. 4, f. 69-70. Cooke exs. no. 30. Corda. iv. f. 37. Fckl. exs. no. 335-338. Kl. exs. ii. no. 353. Berk. exs. no. 217.*

On leaves of mints, &c. Autumn. Common.

1475. Puccinia scorodoniæ. Link. "Wood-sage Brand."

UREDOSPORES?

BRAND-SPORES. Spots obliterated; sori small, confluent in subrotund patches, hypogenous; spores cinnamon; peduncles very long.—*Link. Sp. ii. p. 72. Eng. Fl. v. p. 364. Cooke M.F. p. 197. Cooke exs. no. 31. Cooke L.F. no. 9. Corda. iv. f. 33. Fckl. exs. no. 333. Kl. exs. no. 1487. ii. 356.*

On leaves of *Teucrium scorodonia*. Autumn.

1476. Puccinia scrophulariæ. Lib. 'Fig-wort Brand.'

UREDOSPORES?

BRAND-SPORES. Spots pallid; sori subrotund, oblong, or linear and confluent, surrounded by the ruptured epidermis; spores very much crowded, subglobose or oval, brownish, plicate, but not truly septate; pedicels elongated.—*Lib. exs. no. 193. Ann. N.H. no. 471. Cooke M.F. p. 197.*

On leaves of *Scrophularia aquatica*. Rare.

1477. Puccinia betonicæ. D.C. "Betony Brand."

UREDOSPORES?

BRAND-SPORES. Spots obliterated; sori hypogenous, subrotund, aggregate, surrounded by the ruptured epidermis; spores very pale-brown, short, obovate, elliptic; peduncles short.—*D.C. Fl. Fr. vi. p. 57. Eng. Fl. v, p. 364. Cooke M.F. p. 198. Cooke exs. no. 108. Corda. iv. f. 58. Kl. exs. no. 1590, ii. 355. Berk. exs. no. 218.*

On leaves of *Stachys betonica*. June.

Usually completely covering the under surface of the leaves.

1478. Puccinia vincæ. Berk. "Periwinkle Brand."

UREDOSPORES. Spots yellowish; sori small, subrotund, and oval, on the under surface, surrounded by the ruptured epidermis; spores oval, rather ovoid, brown.—*Trichobasis vincæ. Cooke M.F. t. 6, f. 130-131. Cooke exs. no. 32. Berk. exs. no. 234. Uredo vincæ. D.C. Fl. Fr. vi. p. 70. Eng. Fl. v. p. 378.*

BRAND-SPORES. Spots yellowish; sori hypogenous, scattered, subrotund, surrounded by the ruptured epidermis; spores brown, oblong, slightly constricted, lower cell rather attenuated;

peduncle very short.—*Berk. Eng. Fl.* v. p. 364. *Cooke M.F.* t. 6, f. 132. *Cooke exs.* no. 32. *Kl. exs.* 1091, ii. 107. *Cooke L.F.* no. 10.

On leaves of *Vinca major*. Autumn.

The Uredo-spores and Brand-spores are usually more or less mixed together. Many of the younger leaves are distorted by the parasite.

1479. Puccinia campanulæ. *Carm.* "Campanula Brand."

UREDOSPORES?

BRAND-SPORES. Spots apparently none; sori large, irregular, crowded, for a long time covered with the epidermis, at length surrounded by it; spores oblong-ovate, or slightly constricted; peduncles very short.—*Berk. Eng. Fl.* v. p. 365. *Cooke M.F.* p. 198. *B. & Br. Ann. N.H.* no. 472. *Cooke exs.* no. 109. *Fckl. exs.* no. 375.

On *Campanulæ*, (*Jasione montana*, &c.)

1480. Puccinia clandestina. *Carm.* "Scabious Brand."

UREDOSPORES?

BRAND-SPORES. Spots yellowish; sori very minute, distinct, but collected together in great numbers, dark-brown; epidermis evanescent; spores oblong, very slightly constricted, pedunculate.—*Berk. Eng. Fl.* v. p. 365. *Cooke M.F.* p. 198.

On *Scabiosa succisa*. Rare.

1481. Puccinia sparsa. *Cooke.* "Goat's beard Brand."

UREDOSPORES?

BRAND-SPORES. Spots obsolete; sori on both surfaces, few, scattered, bullate, for a long time covered with the epidermis, oblong, unequal; spores oval, slightly constricted, dark-brown; epispore minutely tuberculate; peduncles very short, caducous.—*Cooke. exs.* no. 330.

On *Tragopogon pratensis*. Aug. New Cross.

Very distinct from *P. compositarum*, in the larger, sooty sori, which are a long time covered, and very few in number, sometimes only three or four, and in the tuberculate spores. It has only been found amongst or near the exoete pustules of *Æcidium Tragopogonis*. This is clearly not the *Puccinia Tragopogonis* of Corda's *Icones*.

1482. Puccinia compositarum. *Sch.* "Composite Brand."

UREDOSPORES. On both sides of the leaf, dark, fuscous, minute, round, scattered, globose, rarely minutely pedicellate.—

Trichobasis cichoracearum. *Lev. Ann. Sc. Nat. Cooke M.F. p.* 208. *Cooke exs. no. 68. Cooke L.F. no. 36.*

BRAND-SPORES. Spots obliterated or whitish; sori small, subrotund, generally hypogenous, encircled with the ruptured epidermis; spores brown, oval, scarcely constricted.—*Lk. Sp. ii. p. 75. Berk. Eng. Fl. v. p. 365. Cooke M.F. t. 4, f. 67-68. Cooke exs. no. 33-34. Berk. exs. no. 219. Corda. iv. f. 45. Fckl. exs. no. 344. Ann. Sc. Nat. (1847) t. 7, f. 22-27. Kl. exs. no. 274, ii. 194. Cooke L.F. no. 11-12.*

On leaves of *Centaurea*, &c. Autumn. Common.

[United States.]

1483. *Puccinia discoidearum*. Link. "Mug-wort Brand."

URED-SPORES. Spots obliterated, brownish on the opposite side; sori subglobose and oval, minute, scattered, on both surfaces; epidermis soon ruptured; spores subglobose, brownish. *Trichobasis artemisiæ. Lev. Uredo artemisiæ. Ann. N.H. no. 136. Berk. exs. no. 235. Berk. Outl. p. 332. Berk. exs. no. 235. Cooke M.F. p. 209. Cooke exs. no. 115.*

BRAND-SPORES. Spots obliterated; sori subrotund, minute, surrounded by the remains of the ruptured epidermis; sporidia brown, oblong or ovoid, somewhat rhomboidal, with both cells attenuated and triangular; peduncles elongated.—*Link. Sp. Pl. ii. p. 73. Kl. exs. no. 190, ii. 685. Corda. iv. t. 4, f. 43. Cooke exs. no. 35. P. tanacetii. D.C. Fl. Fr. ii. p. 222. Fckl. exs. no. 341. P. absinthii. D.C. Fl. Fr. vi. p. 58. P. artemisiarum. Kze. exs. no. 93. P. artemisiæ. Fckl. exs. no. 350.*

On *Artemisia maritima* and *Tanacetum vulgare*.

1484. *Puccinia syngenesiarum*. Link. "Thistle Brand."

URED-SPORES. *Uredo cirsii. Lasch.*

BRAND-SPORES. Spots obliterated; sori minute, collected in oval blackish-brown, raised spots, covered with the epidermis; spores brown; peduncles very short.—*Lk. Sp. ii. p. 74. Berk. Eng. Fl. v. p. 365. Cooke M.F. t. 4, f. 63, 64. Cooke. exs. no. 35. Corda. iv. f. 53. Cooke L.F. no. 13. P. cirsii, Fckl. exs. no. 340.*

On leaves of Thistles. Autumn. Common.

Distinguished from *P. compositarum* by the sori being collected into orbicular heaps, as well as other features.

1485. Puccinia glomerata. Grev. "Ragwort Brand."

URED-SPORES. Spots obliterated; sori solitary or regularly crowded, subrotund and oval, on the under surface, surrounded by the ruptured epidermis; spores subglobose, orange.—*Trichobasis senecionis*, Berk. Outl. p. 332. Cooke M.F. t. 7, f. 145, 146. Cooke exs. no. 66. *Uredo senecionis*. Eng. Fl. v. p. 379. Desm. exs. no. 673.

BRAND-SPORES. Spots pale, sori roundish, depressed, often confluent; spores oblong, very variable; peduncles short.—Berk. Eng. Fl. v. p. 365. Cooke M.F. p. 198. Cooke exs. no. 37. Berk. exs. no. 220.

On leaves of Ragwort, (*Senecio jacobæa*.)

Somewhat similar in habit to *P. syngenesiarum*, but more pulverulent.

1486. Puccinia virgaureæ. Lib. "Golden-rod Brand."

URED-SPORES?

BRAND-SPORES. Spots orbicular, pallid, then yellowish. Sori blackish-brown, minute, punctiform, shining, clustered, nearly stellate, convex; sporidia oblong, subconstricted, yellowish-brown above, attenuated and yellowish-white below; peduncles short.—Lib. exs. no. 393. Corda. iv. t. 5, f. 42. Cooke Seem. Journ. Rabh. Fl. p. 24. Cooke exs. no. 45. *Dothidea solidaginis*, β . Fr. S.M. ii. p. 362. *Xyloma*, D.C. Mem. du Mus. t. 3, f. 12. *Asteroma atratum*, Chev. Fl. Par. p. 449. Fckl. exs. no. 343. Kl. exs. ii. no. 1989.

On leaves of *Solidago virgaurea*. August.

Very characteristic in the stellate, or radiate and dendritic arrangement of the minute sori.

1487. Puccinia variabilis. Grev. "Variable Brand."

URED-SPORES?

BRAND-SPORES. Sori amphigenous, minute, roundish, surrounded by the ruptured epidermis, nearly black; spores variable, obtuse, cells often subdivided; peduncle very short.—Berk. Eng. Fl. v. p. 365. Grev. t. 75. Cooke M.F. t. 4, f. 82, 83. Corda iv. f. 64. Anl. B. f. 4, 5.

On leaves of Dandelion. Summer and autumn.

1488. Puccinia valantiæ. Pers. "Crosswort Brand."

URED-SPORES? *Trichobasis galii*. Lev. in part?

BRAND-SPORES. Spots obliterated; sori small, subrotund,

scattered or crowded; spores pale-brown, obovate, attenuated below, the upper segment globular, easily separating.—*Pers. Syn. p.* 227. *Eng. Fl. v. p.* 365. *Cooke Eng. Fl. v. p.* 198. *Cooke exs. no.* 38. *Kl. exs. no.* 697. *Cooke L.F. no.* 14.

On *Galium cruciatum*. Autumn.

1489. Puccinia galiorum. *Link.* "Bedstraw Brand."

UREDOSPORES. Spots yellowish; sori subrotund, aggregate, closed; spores globose, reddish.—*Trichobasis galii, Berk. Outl. p.* 332. *Cooke M.F. p.* 209. *Cooke exs. no.* 72.

BRAND-SPORES. Spots obliterated; sori hypogenous, partly covered with and surrounded by the ruptured epidermis, scattered; spores brown.—*Link. Sp. ii. p.* 76. *Eng. Fl. v. p.* 366. *Cooke M.F. t. 8, f.* 172, 173. *Fckl. exs. no.* 351. *Kl. exs. ii. no.* 792. *Ann. N.H. no.* 253.

On leaves of several species of *Galium*, and *Asperula odorata*.
[United States.]

1490. Puccinia difformis. *Kunze.* "Goosegrass Brand."

UREDOSPORES?

BRAND-SPORES. Spots yellowish; sori variable, compact, often in rings; epidermis bullate; spores obovate, obtuse, on short pedicels, brown.—*Cooke M. F. Éd. ii. p.* 223. *Cooke exs. no.* 113.

On *Galium aparine*. Autumn.

Usually occurring on or near spots previously occupied by *Æcidium galii*. Very distinct from either *Puccinia galiorum* or *P. valantiæ*, the sori are firm and compact like little spots of pitch.

1491. Puccinia umbelliferarum. *D.C.* "Pignut Brand."

UREDOSPORES. Spots yellowish; sori subrotund and ovate, scattered, on the under surface, surrounded by the ruptured epidermis; spores ovate, oval, and oblong in the same heap, brown.—*Trichobasis umbellatarum, Lev. Ann. Sc. Nat. Cooke M.F. p.* 209. *Cooke exs. no.* 42, *A. Cooke L.F. no.* 38. *Uredo umbellatarum, Johnst. Fl. Berw. ii. p.* 202. *Berk. Eng. Fl. v. p.* 380.

BRAND-SPORES. Spots obliterated; sori small and scattered, subrotund, surrounded by the remains of the ruptured epidermis; spores brown, broadly elliptic, much constricted; peduncle short.—*D.C. Fl. Fr. vi. p.* 58. *Eng. Fl. v. p.* 366. *Cooke. M.F. t. 4, f.* 71. 72. *Cooke exs. no.* 39, 40. *Fckl. exs. nos.* 354-359. *P.*

tumida, Grev. *Fl. Ed.* p. 430. *Eng. Fl.* v. p. 366. *Corda.* iv. f. 49. *Kl. exs.* no. 1185, ii. 348, 349. *Berk. exs.* no. 221. *Cooke L. F.* no. 15.

On various *Umbelliferae*. Common.

1492. *Puccinia heraclei*. Grev. "Hog-weed Brand."

UREDOSPORES. On the under surface, scattered, sometimes subconfluent, roundish, light brown; spores obovate, with a very short peduncle.—*Trichobasis heraclei*, Lev. *Berk. Eng. Fl.* v. p. 380. *Cooke M. F.* p. 209.

BRAND-SPORES. Hypophyllous, blackish, surrounded by the ferruginous epidermis; spores crowded, very obtuse, subovate, slightly constricted; cells nearly equal; stem very short.—*Pucc. heraclei*, Grev. t. 42.

On *Heracleum spondylium*.

Dr. Greville says "it differs in being much larger, more depressed than *P. Umbelliferarum*, and surrounded by the epidermis, which is very fugacious in the other."

1493. *Puccinia apii*. Corda. "Celery Brand."

UREDOSPORES. Spores pale cinnamon, oval, obtuse, or irregular.—*Uredo apii*, Wall. ii. p. 203.

BRAND-SPORES. Sori large, confluent, red-brown, powdery; spores oblong, constricted, brown; epispore smooth, thick; pedicels short, attenuated.—*Corda.* vi. f. 11. *Cooke M. F. ed.* ii. p. 224. *Cooke exs.* no. 40A. *Fckl. exs.* no. 362. *Ann. N. H.* no. 1147. *Cooke L. F.* no. 16.

On leaves of celery. Autumn.

1494. *Puccinia ægopodii*. Link. "Gout-weed Brand."

UREDOSPORES?

BRAND-SPORES. Spots brown; sori minute, subrotund and elongated, surrounded by the ruptured epidermis, often circinating, and forming roundish patches; spores brown; peduncles very short.—*Lk. Sp.* ii. p. 77. *Eng. Fl.* v. p. 366. *Cooke M. F.* p. 199. *Corda.* iv. f. 48. *Fckl. exs.* no. 353. *Kl. exs.* no. 273, ii. 687.

On *Ægopodium podagraria*. Rare.

1495. *Puccinia saniculæ*. Grev. "Sanicle Brand."

UREDOSPORES. Spores globose.—*Eng. Fl.* v. p. 380; sub *Uredo umbellatarum*.

BRAND-SPORES. Orbicular, variable in size, blackish-brown, scattered, rather confluent; spores very obtuse; peduncles somewhat elongated.—*Grev. Fl. Ed.* p. 431. *Eng. Fl.* v. p. 366. *Cooke M.F.* p. 199. *Cooke exs.* no. 41. *Kl. exs.* ii. 350. *Cooke L.F.* no. 17. *Berk. exs.* no. 315.

On leaves of *Sanicula europæa*. Summer and autumn.

“There is a disposition in the smaller punctiform pustules to form a circle round the larger ones.”—*Grev.*

1496. Puccinia bullaria. *Link.* “Hemlock Brand.”

UREDOSPORES?

BRAND-SPORES. Spots obliterated; sori subrotund or oblong, covered with the epidermis; spores brown; peduncle short, nearly obsolete.—*Lk. Sp.* ii. p. 78. *Berk. Eng. Fl.* v. p. 366. *Cooke M.F.* p. 199. *Cooke exs.* no. 42 b. *Pers. Obs.* i. t. 2, f. 5. *Berk. exs.* no. 57.

On dry stems of *Conium maculatum* and other *Umbelliferae*.
[United States.]

1497. Puccinia smyrnii. *Corda.* “Alexander’s Brand.”

UREDOSPORES?

BRAND-SPORES. Spots obliterated; sori hypogenous, large, solitary, scattered, brown; spores ovoid, obtuse, verrucose, slightly constricted, minutely pedicellate.—*Corda. i. f.* 67. *B. & Br. Ann. N.H.* no. 469. *Cooke M.F. t.* 3, f. 55-56. *Cooke exs.* no. 320. *Corda Icon.* iv. f. 67.

On leaves of *Smyrnium olusatrum*.

Remarkable for its coarsely tuberculated spores. One of the finest of the British species, but not very common.

1498. Puccinia anemones. *Pers.* “Anemone Brand.”

UREDOSPORES?

BRAND-SPORES. Spots obliterated; sori subrotund, surrounded by the ruptured epidermis, scattered, aggregate, and confluent; spores brown, very much constricted, consisting of two nearly globose portions, echinulate; peduncles very short.—*Pers. Syn.* p. 226. *Berk. Eng. Fl.* v. p. 367. *Cooke M.F. t.* 4, f. 64-65. *Cooke exs.* no. 43. *Baxt. exs.* no. 82. *Moug. exs.* no. 191. *Corda. iv. f.* 69. *Fckl. exs.* no. 372. *Kl. exs.* no. 467, ii. 346. *Berk. exs.* no. 222. *Cooke L.F.* no. 18. *Conjurer of Chalgrave’s Fern. fide Ray.*

On leaves of *Anemone nemorosa*. April. May. Common.
[United States].

One of the commonest species. The echinulate spores are very pretty.

1499. *Puccinia calthæ*. Link. "Marsh Marigold Brand."

URED-SPORES ?

BRAND-SPORES. Spots brownish ; sori small, subrotund, convex, surrounded by the ruptured epidermis, scattered ; spores obovate, attenuated below, slightly constricted ; peduncle very short.—*Link. Sp. ii. p. 80. Berk. Eng. Fl. v. p. 367. Cooke M.F. p. 199. Cooke exs. no. 114. Corda. iv. f. 40. Fckl. exs. no. 370. Kl. exs. no. 465, ii. 344.*

On leaves of *Caltha palustris*. Spring.

1500. *Puccinia asari*. Kunze. "Asarabacca Brand."

URED-SPORES ?

BRAND-SPORES. Spots obliterated ; sori small, subglobose, crowded, or circinating, ultimately confluent, surrounded by the ruptured epidermis, usually forming a large, roundish, convex, pulverulent mass ; spores brown, elliptic, constricted.—*Cooke M.F. ed. ii. p. 224. Cooke exs. no. 110. Fckl. exs. no. 376.*

On leaves of *Asarum europæum*. July. N. Wales.

The large, round, pulverulent masses of confluent sori make this species very conspicuous.

1501. *Puccinia noli-tangeris*. Corda. "Balsam Brand."

URED-SPORES. Spores subglobose, brown, pulverulent, with a short evanescent peduncle.—*Uredo impatientis. Rabh. D.C. Fl. no. 35. Rabh. exs. no. 288.*

BRAND-SPORES. Spots irregular, confluent, brownish ; sori gregarious, reddish-brown ; spores oblong, obtuse or attenuated, distinctly apiculate, brown ; peduncles rudimentary.—*Corda. iv. f. 57. B. & Br. Ann. N.H. no. 1044. Cooke M.F. p. 199. Cooke exs. no. 44. Fckl. exs. no. 1672. Kl. exs. no. 1182, ii. 340. Cooke L.F. no. 19.*

On leaves of *Impatiens fulva* and *noli-tangere*.

1502. *Puccinia violarum*. Link. "Violet Brand."

URED-SPORES. Spots yellowish ; sori subrotund, scattered, generally on the under surface ; epidermis ruptured, persistent ; spores subglobose, brown.—*Trichobasis violarum. Lev. Ann. Sc.*

Nat. Cooke M.F. p. 210. Cooke exs. no. 46. Cooke L.F. no. 43. Uredo violarum. D.C. Fl. Fr. vi. p. 73. Eng. Fl. v. p. 380. Sow. t. 440.

BRAND-SPORES. Spots yellowish; sori hypogenous, small, crowded, covered with the epidermis, then surrounded by it; spores brown, elliptic, or broadly elliptic, slightly constricted.—*Link. Sp. ii. p. 80. Eng. Fl. v. p. 367. Cooke M.F. p. 200. Cooke exs. no. 46. Fckl. exs. no. 374. Kl. exs. no. 473, ii. 196. Berk. exs. no. 223.*

On leaves of violets. Autumn. Common.

1503. *Puccinia lychnidearum.* Link. "Lychnis Brand."

URED-SPORES. Spots pallid yellowish; sori subrotund plane, scattered on the under surface, cinnamon, at length brownish; epidermis ruptured; spores globoso-ovoid, sessile, or shortly pedicellate.—*Trichobasis lychnidearum. Lev. Ann. Sc. Nat. Cooke M.F. p. 209.*

BRAND-SPORES. Spots yellowish; sori subrotund or oblong, unequal, scattered, rarely confluent; spores white, at length brown, elongated, oblong, slightly constricted.—*Link. Sp. ii. p. 80. Berk. Eng. Fl. v. p. 367. Cooke M.F. p. 200. Cooke exs. no. 47. Corda. iv. f. 38. Fckl. exs. no. 366-369. Kl. exs. no. 1147, ii. 683. Ung. exs. t. 6, f. 33. Berk. exs. no. 224. P. mæhringæ. Fckl. exs. no. 1934. Cooke exs. no. 297. Cooke L.F. no. 21.*

On leaves and stems of *Lychnis*, *Sagina*, *Arenaria*, &c. *U.S.*

I cannot think that *Puccinia mæhringæ*, on the leaves of *Arenaria trinervis* is entitled to be regarded as a distinct species.

1504. *Puccinia umbilici.* Guep. "Penny-wort Brand."

URED-SPORES ?

BRAND-SPORES. Seated on pallid spots; sori round, convex, compact, at length confluent in large orbicular patches; spores subglobose, not constricted, shortly pedicellate.—*Guep. Bot. Gall. p. 890. B. & Br. Ann. N.H. no. 470. Berk. exs. no. 329. Cooke M.F. t. 4, f. 80-81. Cooke exs. no. 48. Cooke L.F. no. 20.*

On *Cotyledon umbilicus*.

1505. *Puccinia rhodiolæ.* B. & Br. "Stone-crop Brand."

URED-SPORES ?

BRAND-SPORES. Spots orbicular, brown; sori minute, crowded; spores shortly pedicellate; articulations depressed,

sometimes spuriously subdivided.—*Berk. in Gard. Fl. Forf. p. 296. B. & Br. Ann. N.H. no. 468. Cooke M.F. p. 200.*

On leaves of *Sedum rhodiola*. Summer. Rare.

The articulations are sometimes spuriously subdivided, showing a tendency to the structure of *Triphragmium*.—*B. & Br.*

1506. *Puccinia saxifragarum*. Schl. "Moschatel Brand."

UREDOSPORES?

BRAND-SPORES. Spots obliterated; sori subrotund, scattered, crowded and confluent, when young surrounded by the epidermis; spores red-brown, rather short, oblong, slightly constricted.—*Link. Sp. ii. p. 80. Berk. Eng. Fl. v. p. 367. Cooke M.F. p. 200. Corda. iv. f. 59. Fckl. exs. no. 371.*

On both surfaces of leaves of *Adoxa moschatellina*, &c. Summer. [United States.]

1507. *Puccinia chrysosplenii*. Grev. "Saxifrage Brand."

UREDOSPORES?

BRAND-SPORES. Sori of various sizes, few together and confluent, pale brown; spores long, somewhat waved, much attenuated at either extremity; peduncle elongated.—*Grev. Eng. Fl. v. p. 367. Cooke M.F. p. 200.*

On the under surface of the leaves of *Chrysosplenium oppositifolium*. Very rare.

1508. *Puccinia epilobii*. D.C. "Willow Herb Brand."

UREDOSPORES. Spots yellowish; sori subrotund, scattered, surrounded by the ruptured epidermis, often on the under surface; spores subglobose, brown.—*Trichobasis epilobii. Berk. Outl. p. 333. Cooke M.F. p. 210. Uredo epilobii. Eng. Fl. v. p. 381.*

BRAND-SPORES. Spots pale; sori hypogenous, subrotund, crowded; epidermis evanescent; spores effuse, cinnamon, broadly elliptic, strongly constricted; peduncles very short.—*D.C. Fl. Fr. vi. p. 61. Berk. Eng. Fl. v. p. 368. Cooke M.F. p. 200. Corda iv. f. 51. Fckl. exs. no. 339. Kl. exs. no. 1184. Berk. exs. no. 349.*

On *Epilobium palustre*.

P. Oenotheræ Vize. Grev. Man. 77p 109
 " *apronphæ* Kurt. Yervillea 1878 p 137
 " *fluremæ* Cooke. " " "

- 1509. *Puccinia pulverulenta.* Grev. "Great willow-herb Brand."**

UREDOSPORES. Sori scattered or subrotund; spores subglobose, brown.—*Trichobasis epilobii*. Berk. Outl. p. 333 (partly). Cooke M.F. p. 210 (in part).

BRAND-SPORES. Sori hypogenous, dark-brown, scattered or subconfluent, open, concentric; spores minute, obovate, slightly constricted, lower cell rather attenuated; peduncle not very short.—Grev. Fl. Ed. p. 432. Eng. Fl. v. p. 368. Cooke M.F. t. 4, f. 78-79. Cooke exs. no. 49. Berk. exs. no. 108.

On leaves of *Epilobium montanum* and *E. hirsutum*. Aug. Sept. Common.

"Spores scarcely 'obtusely oval,' but obovate, slightly constricted, the lower cell attenuated slightly; stem not very short. Certainly nearly allied to *P. epilobii*, but distinct in the form of the spores."—Eng. Fl.

- 1510. *Puccinia circeæ.* Pers. "Night-shade Brand."**

UREDOSPORES. Sori minute, crowded, subrotund, slightly confluent on the under surface; spores irregular, ovate, small, ochraceous.—*Uredo circeæ*, A. & S. Cooke M.F. t. 7, f. 135, 136. Cooke exs. no. 62. Berk. exs. no. 342. Cooke L.F. no. 31.

BRAND-SPORES. Spots obliterated; sori minute, semi-globose, crowded into subrotund patches, occasionally confluent, generally covered with the epidermis; spores brown, oblong, often acute, sometimes obtuse; peduncles long, thick.—Pers. Syn. p. 228. Eng. Fl. v. p. 368. Cooke M.F. p. 200. Cooke exs. no. 50. Mougl. exs. no. 192. Desm. exs. no. 615. Corda. iv. f. 34. Fckl. exs. no. 328-1548. Berk. exs. no. 319. Kl. exs. no. 464. ii. 357.

On the leaves of *Circeæ lutetiana* & *C. alpina*. Autumn.
[Maine, U.S.]

- 1511. *Puccinia prunorum.* Link. "Plum-tree Brand."**

UREDOSPORES. Seated on definite yellowish spots; sori on the under surface scattered or in clusters, very minute, roundish, or oblong; spores at length rusty-brown, subglobose.—*Trichobasis rhamni*, Cooke Seem. Journ. ii. p. 344. Cooke M.F. p. 210. *Trichobasis pruni-spinosæ*, Lev. Ann. Sc. Nat.

BRAND-SPORES. Spots obliterated; sori hypogenous, subrotund, scattered; epidermis obliterated; spores brown, peduncles

very short.—*Link. Sp. ii. p. 82. Eng. Fl. v. p. 368. Cooke M.F. p. 201. Cooke exs. no. 51. Baxt. exs. no. 83. Fckl. exs. no. 330. Cooke L.F. no. 22. Corda. iv. f. 68. Kl. exs. no. 590.*

On leaves of plum-tree, *Rhamnus catharticus*, &c.

[Low. & Mid. Carolina.]

1512. *Puccinia fabæ.* *Link.* "Bean Brand."

URED-SPORES. Spots obliterated; sori subrotund and oval; bullate, scattered and aggregate, surrounded by the ruptured epidermis; spores ovoid, brown.—*Trichobasis fabæ, Lev. Ann. Sc. Nat. Cooke M.F. p. 209. Cooke exs. no. 71. Cooke L.F. no. 41.*

BRAND-SPORES. Spots none; sori subrotund, or elongated, surrounded by the ruptured epidermis; spores at length black, ovato-globose; peduncle slender.—*Link. Sp. ii. p. 82. Eng. Fl. v. p. 369. Cooke M.F. p. 201. Ung. Exan. t. 7. f. 39 B. P. globosa. Grev. t. 29.*

On beans. Aug.—Sept.

[United States.]

1513. *Puccinia fallens.* *Cooke.* "Clover Brand."

URED-SPORES. Spots obliterated; sori amphigenous, numerous, scattered, subrotund, brown, surrounded by the remains of the ruptured epidermis; spores subovate; pedicels short, hyaline, evanescent; epispore verrucose.—*Cooke Seem. Journ. vol. iv. 1866. Cooke L.F. no. 40. Uredo fallens, Desmz. Ann. des Sc. Nat. ser. 3, iii. p. 357. Exs. ed. i. no. 1325. ed. ii. no. 725.*

BRAND-SPORES. Sori few and small, scattered, intermixed with pustules of *Uredo-spores*; sporidia obovate, on rather long pedicels of a tawny colour, and slightly constricted at the septum; epispore smooth.—*Cooke Seem. Journ. vol. iv. 1866.*

On *Vicia sepium* and *Trifolium*.

1514. *Puccinia buxi.* *D.C.* "Box Brand."

URED-SPORES?

BRAND-SPORES. Spots none; sori subrotund, convex, scattered; spores brown, oblong, rather strongly constricted, lower cell slightly attenuated; peduncle very long.—*D.C. Fl. Fr. vi. p. 60. Eng. Fl. v. p. 369. Cooke M.F. p. 201. Cooke exs. no. 52. Sow. t. 439. Moug. exs. no. 676. Kl. exs. no. 1992, ii. 684. Berk. exs. no. 109. Cooke L.F. no. 23.*

Gen. 168.

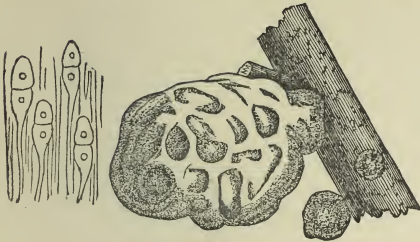
GYMNOSPORANGIUM, D.C.

Fig. 203.

Peduncles extremely long, agglutinated by gelatine into a tremeloid expanded mass; spores uni-septate.—*Berk. Outl. p. 330. Eng. Fl. v. p. 361.*

(Fig. 203.)

1515.

Gymnosporangium juniperi. Lk.

Forming a soft, gelatinous, irregular, orange mass; spores ovate or subelliptic, filled with subglobose granules.—*Fckl. exs. no. 413. Bisch. f. 3881. Berk. Outl. t. 2, f. 5. Eng. Fl. v. p. 361. Nees. f. 23 a. Cooke M.F. p. 201.*

On living twigs of *Juniperus communis*. [United States.]

Forming a very soft, gelatinous, irregular, orange mass, which dries up, so as frequently to leave scarcely any trace.—*M. J. B.*

(Fig. 203.)

G. arundinis, Ga. On Andropogon

Gen. 169.

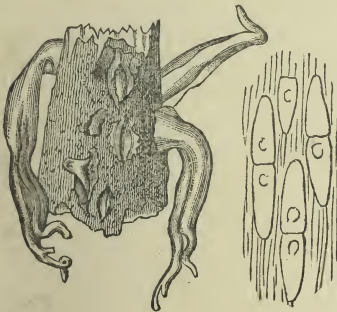
PODISOMA, Lk.

Fig. 204.

Peduncles extremely long, agglutinated by gelatine into a common stem, spreading out above into a clavariæ-form mass; spores mostly uniseptate.—*Berk. Outl. p. 331.*

(Fig. 204.)

1516. Podisoma juniperi. Fr. "Juniper Podisoma."

Orange, clavariæform, somewhat branched; stroma simple; spores very long, lanceolate, filled with elliptic granules.—*Fr. S.M.* iii. p. 508. *Eng. Fl.* v. p. 362. *Bull. t.* 427, f. 1. *Berk. exs.* no. 106. *Cooke M.F.* p. 201. *Cooke exs.* no. 125. *Fckl. exs.* no. 415. *Bisch. f.* 3880. *Pay. f.* 354. *Ann. Sc. Nat.* (1854), t. 10, f. 1-12.

On living branches of *Juniperus communis*. April.

[Mid. Carolina.]

Ersted regards this as a form of *Ræstelia lacerata*.

(Fig. 204.)

1517. Podisoma sabinæ. Fr. "Savin Podisoma."

Red-brown, tuberculiform and clavate, simple; stroma obliterated; spores obovate, uniseptate.—*Eng. Fl.* v. p. 362. *Nees. f.* 15. *Pers. Disp. t.* 2, f. 1. *Eng. Bot. t.* 710. *Fckl. exs.* no. 416. *Bisch. f.* 3882-3883. *Berk. Outl. t.* 2, f. 4. *Cooke M.F.* p. 201. *Berk. exs.* no. 107.

On living branches of *Juniperus sabinæ*. April. May.

According to Ersted, this is a condition of *Ræstelia cancellata*.

1518. Podisoma foliicolum. B. "Juniper-leaf Podisoma."

Epiphyllous, brown-black masses, subglobose, subelliptic, or irregular, consisting of radiating, crowded, very slender, agglutinated filaments, each bearing an elliptic or clavate, very obtuse spore, 3 to 5-septate.—*Berk. Eng. Fl.* v. p. 362. *Cooke M.F.* p. 201. *Fckl. exs.* no. 414.

On living leaves of common juniper.

Masses subelliptic or irregular, dark brown-black, consisting of radiating, crowded, very slender, agglutinated filaments each bearing an elliptic or clavate, very obtuse spore with 3-5 septa. Some of the filaments are simply clavate and barren.—*M. J. B.*

Order XVI. CÆOMACEI.

Parasitic on living plants; peridium absent; spores of one or two orders, simple.

CÆOMACEI.

Spores of one order—

Simple and free.

Without appendages.

Springing from delicate threads *Tilletia*.

Produced in separate cells.

Deeply seated, pulverulent. . . . } *Ustilago*.

Generally nearly black }

Superficial } *Uredo*.

Yellow or brown }

Not inclosed in separate cells *Lecythea*.

With peduncles.

Deciduous *Trichobasis*.

Permanent *Uromyces*.

Compound.

Irregular *Urocystis*.

Subglobose or shell-shaped *Tubercinaria*.

Spores of two orders—

1. Spherical } *Coleosporium*.

2. Cylindrical, septate }

1. Spherical } *Melampsora*.

2. Wedge-shaped, compact }

1. Concatenate, exposed } *Cystopus*.

2. Spherical, myceloid }

Gen. 170.

TILLETIA, Tul.

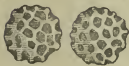


Fig. 205.

Spores spheroidal, reticulated, proceeding from delicate branched threads.—*Berk. Outl. p. 335. Tul. Ann. Sc. Nat. 1847.*

(Fig. 205.)

1519.

Tilletia caries. Tul. "Bunt."

Included within the germen; spores spherical, rather large, black, reticulated.—*Tul. Ann. Sc. Nat. 1847, vii. t. 5, f. 1-16. Cooke M.F. p. 202, t. v. f. 84-91. Berk. Hort. Journ. ii. p. 113. Cooke Quek. Journ. i. p. 167. Cooke exs. no. 53. Tul. Ann. Sc. Nat. 4th. ser. ii. t. 12, f. 1-26. Uredo foetida. Bauer Ann. Sc. Nat. 1824, ii. t. 7, f. 17-20. Uredo caries. Eng. Fl. v. p. 375. Ditm. t. 34. Berk. exs. no. 113.*

On wheat, filling the grains. Autumn. Common.
[United States.]

Foetid when crushed. For particulars regarding the germination of these spores, see paper by Rev. M. J. Berkeley, in *Horticultural Journal*, and by the author in *Quekett Journal*, i. p. 167. (Fig. 205.)

Gen. 171. **USTILAGO**, Link.

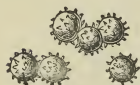


Fig. 206.

Plant deeply seated; spores simple, springing from delicate threads, or in closely packed cells, ultimately breaking up into a powdery mass.—*Berk. Outl.* p. 335. (Fig. 206.)

1520. Ustilago carbo. *Tul.* "Corn Smut."

Produced on the receptacle and rachis; epidermis soon ruptured; spores loose, minute, globose, black.—*Tul. Ann. Sc. Nat.* (1847), t. 3, f. 1-12. *Ustilago segetum.* *Ditm.* t. 33. *Cooke M.F.* t. 5, f. 98-99. *Cooke exs.* no. 54. *Corda.* iv. f. 9. *Uredo segetum.* *Pers. Syn.* p. 224. *Moug. exs.* no. 291. *Bast. exs.* no. 43. *Eng. Fl.* v. p. 374. *Bull.* t. 472, f. 2. *Kl. exs.* no. 81.

On the ears of corn and grasses. Autumn. Common.
[United States.]

1521. Ustilago urceolorum. *Tul.* "Sedge Smut."

Produced on the glumes and utricles; epidermis soon bursting; spores in a compact mass, afterwards breaking up, globose, rather large, granulated.—*Tul. Ann. Sc. Nat.* (1847), vii. t. 4, f. 7-10. *Cooke M.F.* t. 6, f. 109-111. *Nees.* f. 6. *Kl. exs.* no. 195. *Uredo urceolorum.* *D.C. Fl. Fr.* vi. p. 78. *Eng. Fl.* v. p. 375. *Sow.* t. 396, f. 4. *Berk. exs.* no. 114.

Surrounding the seed of various Carices as *Carex præcox*, *stellulata*, *recurva*, and *pseudo-cyperus*. Autumn. Rather common.
[Mid. and Up. Carolina.]

1522. Ustilago longissima. *Tul.* "Elongated Smut."

Produced on the leaves in linear, long, parallel, dirty-olive patches; epidermis bursting longitudinally; spores globose, breaking up into minute granules, olive-black.—*Tul. Ann. Sc. Nat.* (1847), vii. p. 76. *Cooke M.F.* t. 5, f. 105-107. *Cooke exs.* no. 55. *Uredo longissima.* *Sow.* t. 139. *Eng. Fl.* v. p. 375. *Berk. exs.* no. 230. *Kl. exs.* no. 84.

On leaves of *Poa aquatica* and *P. fluitans*. Summer. Common.

“Giving the leaves a very remarkable appearance.”—*Eng. Fl.*

1523. *Ustilago olivacea*. *Tul.* “Olive Smut.”

Infesting the enlarged receptacle; epidermis soon bursting; spores olive-green, powdery, minute, mixed with filaments.—*Tul. Ann. Sc. Nat.* (1847). *Cooke M.F. t. 6, f. 126, 127.* *Cooke exs. no. 298, vii. t. 4, f. 11.* *Uredo olivacea, Eng. Fl. v. p. 376.*

On *Carex riparia*.

1524. *Ustilago hypodytes*. *Fr.* “Grass-culm Smut.”

Produced on the culms beneath the sheaths, afterwards exposed; spores minute, subglobose, brownish-black.—*Tul. Ann. Sc. Nat.* (1847), vii. t. 3. f. 14. *Cooke M.F. t. 5, f. 100, 101.* *Cooke exs. no. 56. B. & Br. Ann. N.H. no. 256, 481.* *Uredo hypodytes, Desm. exs. no. 473. Kl. exs. no. 83.*

On the culms of various grasses. Summer. [Low. Carolina.]

1525. *Ustilago maydis*. *Corda.* “Maize Smut.”

Produced on the stems, germens, &c.; epidermis at length bursting; spores spherical, minute, brownish-black, surface covered with echinulate warts.—*Tul. Ann. Sc. Nat.* (1847), vii. t. 2. *Cooke M.F. t. 5, f. 108. Kl. exs. no. 193. Corda. Icon. iv. 3. Philip. Traite. t. 5, 6, 7.*

On stems, &c., of *Zea mays*.

[United States.]

(Fig. 206, spores magnified.)

1526. *Ustilago montagnei*. *Tul.* “Beaksedge Smut.”

Produced on the seeds; epidermis bursting; spores slightly angular, small, dark-coloured, intermixed sparingly with fragile filaments.—*Tul. Ann. Sc. Nat.* (1847), vii. t. 5, f. 31. *Cooke M.F. t. 5, f. 96, 97. B. & Br. Ann. N.H. no. 479.*

On seeds of *Rhynchospora alba*.

[Low. Carolina.]

1527. *Ustilago grandis*. *Tul.* “Reed Smut.”

Produced on the stems of reeds, forming thick bullate patches several inches long, occupying whole internodes, covered by their sheath; spores globose, rather large.—*Tul. Ann. Sc. Nat.* (1847), vii. p. 78. *Ustilago typhoides, B. & Br. Ann. N.H. no. 480. Cooke M.F. t. 6, f. 128, 129.*

On stems of *Arundo phragmitis*. Autumn.

“Forming thick bullate patches several inches in length, occupying whole internodes covered by their sheath. Spores larger than in *U. hypodytes* and *U. longissima*.”—*B. & Br.*

1528. *Ustilago salveii*. *B. & Br.* “Cocksfoot Smut.”

Produced on the leaves, forming elongated parallel sori on the upper surface; spores obovate, rather large, rough, with minute granules.—*B. & Br. Ann. N.H. no. 482. Cooke M.F. t. 6, f. 117-18. Cooke exs. no. 57.*

On leaves of *Dactyles glomerata* and other grasses.

A distinct and interesting species, exhibiting in its spores the type of an *Uredo* rather than of *Ustilago*. Spores four times as long as in *U. longissima*.—*B. & Br.*

1529. *Ustilago grammica*. *B. & Br.* “Banded Smut.”

Forming little transverse bands, consisting of short parallel black lines; spores globose, very minute.—*B. & Br. Ann. N.H. no. 483. Cooke M.F. t. 6, f. 120-122.*

On stems of *Aira aquatica* and *A. cæspitosa*. Rare.

Forming little transverse fasciæ, consisting of short parallel black lines, a line or more in length. Spores far smaller than in *U. longissima*, not exceeding one-third of their diameter.—*B. & Br.*

1530. *Ustilago vinosa*. *Tul.* “Oxyria Smut.”

Produced on the swollen receptacles; spores roundish, very small, and minutely papillose, separately pellucid, in clusters, violaceous.—*Tul. Ann. Sc. Nat. (1847), vii. p. 96. Cooke M.F. p. 204. B. & Br. Ann. N.H. no. 484.*

On the swollen receptacles of *Oxyria reniformis*.

Spores smaller than in *U. utriculosa*, and merely papillate, instead of being reticulated.—*B. & Br.*

1531. *Ustilago utriculosa*. *Tul.* “Utricle Smut.”

Produced in the germen and perigonium; epidermis soon ruptured; spores effuse, minute, globose, purple-black.—*Tul. Ann. Sc. Nat. (1847), vii. p. 102, t. 4, f. 2-6. Cooke, M.F. t. 6, f. 112-116. Cooke exs. no. 58. Uredo utriculosa, Corda. ii. f. 12. Eng. Fl. v. p. 377. Nees. f. 6.*

On *Polygonum hydropiper* and other *Polygona*. Autumn.
Common. [United States.]

1532. Ustilago flosculorum. *Tul.* "Floret Smut."

Produced within the florets; spores minute, purplish-brown. *Tul. Ann. Sc. Nat.* (1847), vii. p. 99. *Cooke M.F. t. 6. f. 123-125.* *Uredo flosculorum*, *Fr. S.M.* iii. p. 348. *Sow. t. 396, f. 2?* *Eng. Fl. v. p. 379.*

On florets of *Scabiosa arvensis*.

1533. Ustilago receptaculorum. *Fr.* "Goatsbeard Smut."

Produced within the receptacles; spores ovate, minute, reticulated, violet-brown, nearly black, very profuse, filling the receptacle.—*Tul. Ann. Sc. Nat.* (1847), vii. t. 4, f. 1. *Cooke M.F. t. v. f. 92-95.* *Cooke exs. no. 59.* *Uredo receptaculorum.* *Desm. exs. no. 128.*

On receptacles of *Tragopogon pratensis*. June. July. Common.

1534. Ustilago antherarum. *Fr.* "Anther Smut."

Produced on the anthers and germen; spores subglobose, effuse, violet.—*Tul. Ann. Sc. Nat.* (1847), vii. t. 4, f. 12-19, t. 5, f. 23. *Cooke M.F. t. 5, f. 102-104.* *Sow. t. 396, f. 1.* *Kunze exs. no. 218.* *Uredo antherarum.* *Eng. Fl. v. p. 381.* *Nees. t. i. f. 5.* *Kl. exs. no. 192.*

On the anthers of *Silene*, *Lychnis*, &c. Common.

[United States.]

Gen. 172.

THECAPHORA, Fing.

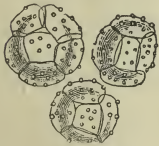


Fig. 207.

Spores oblong or subglobose, smooth, or echinulate, agglomerated together, few or many, into more or less angular masses enclosed in cysts.—*Tul. Ann. Sc. Nat.* 1847. (Fig. 207.)

1535. Thecaphora hyalina. *Fing.* "Hyaline Thecaphora."

Spores globose or oblong, minute, enclosed in large, hyaline, sub-hexagonal cysts.—*Fing. Linn. x. p. 230.* *Tul. Ann. Sc. Nat.* (1847), vii. p. 109. *B. & Br. Ann. N.H.* (1866) no. 1148. *Desm. exs. no. 274.* *Cooke exs. no. 313.*

In capsules of *Convolvulus soldanella*. Aug. King's Lynn, Exmouth.

There is no external evidence in the capsule of the presence of this smut, and it is only by breaking it open that the *Thecaphora* can be seen. It raises the testa of the green seed like a dark-coloured blister. The affected seeds shrivel, and do not become of the normal black colour. (Fig. 207.)

Gen. 173.

Tubercinina
TUBURCINIA, Fr.



Fig. 208.

Plant deeply seated; spores multi-cellular, subglobose, or conchiform.—*Berk. Outl. p. 335.* (Fig. 208.)

1536. Tuburcinia scabies. B. "Potato Scab."

Spores globose, composed of minute cells, forming together a hollow globe, with one or more lacunæ, generally attached laterally by a slender thread, olive.—*B. & Br. Ann. N.H. no. 489. Berk. Hort. Journ. i. t. 4, f. 30-31. Cooke M.F. t. 3, f. 54. Rabh. exs. no. 900.*

On potatoes.

The spores of this species are very curious; they are composed of minute cells, forming together a hollow globe, with one or more lacunæ communicating with the external air. A hollow shell with one or two apertures will give a notion of their form. They are generally attached laterally by a delicate thread.—*B. & Br.* (Fig. 208 spores.)

1537. Tubercinina trientalis. B. & Br. "Trientalis Smut."

Sori two lines broad, bullate, containing a black mass of rather irregular depressed subglobose spores, which are very opaque and distinctly cellular. Hyphasma white, branched, creeping, delicate.—*B. & Br. Ann. N.H. no. 488. Cooke M.F. t. 3, f. 52-53.*

On leaves of *Trientalis Europæa*.

Gen. 174.

UROCYSTIS.

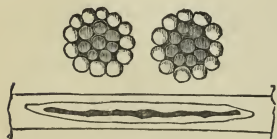


Fig. 209.

Spores irregular, consisting of several cells.—*Polycystis. Lev.* (Fig. 209.)

This genus is very closely allied to *Thecaphora*.

1538. Urocystis violæ. *B. & Br.* "Violet Smut."

Sori scattered, elongated, on both surfaces of the leaves and petioles; spores more or less globose, consisting of several cells, surrounded by a common irregular crust.—*Polycystis violæ*. *B. & Br. Ann. N.H. no. 487. Cooke exs. no. 78. Cooke M.F. p. 212, pl. ix. figs. 185-186. Granularia violæ. Sow. t. 440.*

On leaves and petioles of violets. August. Common.

Forming gouty swellings of the petioles and principal veins, and otherwise deforming the leaves, at length bursting in two or three places and exposing the sooty spores. "The spores are more or less globose, consisting of several cells, surrounded by a common irregular crust."

1539. Urocystis colchici. *Tul.* "Meadow Saffron Smut."

Sori elongated, bursting irregularly; spores smooth, or slightly papillose.—*Polycystis colchici. Tul. Ann. Sc. Nat. (1847), vii. p. 117. Cooke M.F. p. 211. B. & Br. Ann. N.H. no. 485. Sporisorium colchici. Lib. exs. no. 194. Uredo colchici Berk. exs. no. 309.*

On leaves of meadow saffron (*Colchicum autumnale*).

1540. Urocystis occulta. *Preuss.* "Rye Smut."

Sori very long, linear; epidermis bursting longitudinally; spores globose, with several projecting nodules, dark-brown.—*Polycystis parallela. B. & Br. Ann. N.H. no. 486. Cooke M.F. p. 212, pl. ix. figs. 187, 188. Preuss. Sturm. t. 1. Uredo parallela. Eng. Fl. v. p. 375.*

On culms and sheaths of rye, and on the leaves of *Carices*.

In long parallel lines on the leaves, with very much the habit of an *Ustilago*. (Fig. 209.)

1541. Urocystis pompholygodes. *Schlecht.* "Buttercup Smut."

Sori variable, bullate; epidermis inflated, at first entire, then bursting irregularly, its remains surrounding the clusters; spores copious, subglobose, black, opaque or pellucid.—*Polycystis pompholygodes Lev. Cooke M.F. p. 212, pl. ix. figs. 183, 184. Cooke exs. no. 79. Uredo pompholygodes. Berk. Ann. N.H. no 137. Berk. exs. no. 236.*

On *Ranunculus repens* and other *Ranunculaceæ*. Summer. Common.

Causing gouty swellings of the petioles, and the principal veins of the leaves. At length bursting and exposing the sooty spores. Not uncommon on the Wood Anemone.

Gen. 175.

UROMYCES, Lev.

Fig. 210.

Spores unilocular, attached permanently to a decided peduncle of greater length.—*Berk. Outl. p. 333.* (Fig. 210.)

1542. Uromyces alliorum. D.C. "Garlic Rust."

Spots obliterated, sori linear, oblong, or oval, amphigenous; spores subglobose, yellow.—*Lev. Ann. Sc. Nat. Cooke M.F. p. 211. Uredo alliorum. Eng. Fl. v. p. 376 (partly). Uredo porri. Sow. t. 411.*

On species of *Allium*.

1543. Uromyces appendiculata. Lev. "Long-stemmed Rust."

Spots yellowish-brown, sori subrotund and oval, confluent, nearly plane, on the under surface; epidermis bursting; spores ovoid, brown, with a long peduncle.—*Lev. Ann. Sc. Nat. Cooke M.F. t. 7, f. 149, 150. Cooke exs. no. 323. Uredo appendiculosa. Eng. Fl. v. p. 383.*

On *Leguminosæ*, and other plants. Aug. and Sept. Common.
[Mid. Carolina.]

1544. Uromyces apiculosa. Lev. "Short-stemmed Rust."

Spots yellow or brown, sori subrotund, scattered, surrounded by the ruptured epidermis; spores ovoid, brown, shortly pedunculate.—*Lev. Ann. Sc. Nat. Cooke M.F. t. 7, f. 154, 155. Cooke exs. no. 322. Berk. exs. no. 116-117. Cooke L.F. no. 26. Uredo apiculosa. Eng. Fl. v. p. 382.*

On dock and various other plants. Aug. Sept. Common.
[United States.]

1545. Uromyces limonii. Lev. "Sea-lavender Rust."

Epiphyllous, sori bullate, scattered, or disposed in rings; spores ovate.—*Lev. Ann. Sc. Nat. Cooke M.F. p. 211.*

On *Statice limonia*.

1546. Uromyces ficariæ. Lev. "Pilewort Rust."

Spots yellowish, sori scattered, aggregate, confluent, and expanded; epidermis ruptured; spores ovoid, brown.—*Lev. Ann.*

Sc. Nat. Cooke M.F. t. 7. f. 156, 157. Cooke exs. no. 122. Berk. exs. no. 237. Cooke L.F. no. 24. Uredo ranunculacearum. Eng. Fl. v. p. 380.

On *Ranunculus ficaria*. May. June. Common.

1547. *Uromyces intrusa*. Lev. "Lady's Mantle Rust."

On the under surface, scattered, or partially aggregate, reddish-brown, rounded, somewhat prominent, minute, very unequal; spores roundish or oval.—*Lev. Ann. Sc. Nat. Cooke M.F. p. 211. Cooke exs. no. 121. Cooke L.F. no. 27. Uredo intrusa. Eng. Fl. v. p. 382. Trachyspora alchemillæ. Fckl. exs. no. 318.*

On *Alchemilla vulgaris*.

1548. *Uromyces concentrica*. Lev. "Hyacinth Rust."

Spots oblong or subrotund, crowded into patches; epidermis bursting longitudinally; spores rubiginous, obovate, shortly pedunculate.—*Lev. Ann. des Sc. Nat. Cooke exs. no. 76. Cooke M.F. ed. ii. p. 225. U. scillæ. Fckl. exs. no. 401. Uredo concentrica. Desm. Ann. Sc. Nat. ser. 3, t. vi. p. 62, exs. no. 1478. West & Wall, no. 675. Trichobasis scillarum. Berk. Outl. p. 332. Cooke M.F. p. 208. Uredo scillarum. Grell. Berk. Eng. Fl. v. p. 376. Uredo muscari. Duby. Bot. Gall. ii. p. 838? Puccinia scillarum. Baxt. exs. no. 40.*

On leaves of Wild Hyacinth.

1549. *Uromyces polygoni*. Fckl. "Knot-grass Rust."

Cauline; sori elongated and confluent, convex, surrounded by the remains of the ruptured epidermis; sporidia subglobose or globose, smooth, yellowish-brown; pedicels very long, thickened, hyaline, persistent.—*Fckl. exs. no. 399. Cooke Seem. Journ. Cooke M.F. ed. ii. p. 225. Capitularia polygoni. Rabh. Bot. Zeit. 1851, p. 449. Rabh. exs. i. no. 1995. F.E. no. 185. Puccinia vaginalium. Link. Sp. Pl. (in part).*

On stems of *Polygonum aviculare*.

1550. *Uromyces sparsa*. Lev. "Spergularia Rust."

Spots pallid; sori subrotund and oval, amphigenous and cauline; epidermis erumpent; sporidia ovoid, brownish; peduncles thickened, short.—*Lev. Ann. des Sc. Nat. 1847, viii. p. 369. Fr. Summ. 514. Cooke M.F. ed. ii. p. 225. Uredo sparsa. Kze. exs. no. 170. Cæoma sparsum. Link. Sp. Pl. ii. p. 27.*

On *Spergularia rubra*. Swanscombe, Kent.

1551. Uromyces graminum. Cooke. "Cocksfoot Rust."

Epiphyllous on both surfaces; sori oblong, or confluent and linear, convex, black and shining, so as easily to be confounded on casual observation with *Dothidia graminis*, P., at length bursting longitudinally; sporidia subglobose or ovate, tawny, with hyaline pedicels of variable length.—Cooke *Seem. Journ. Cooke M.F. ed. ii. p. 225.*

On leaves of *Dactylis glomerata*. Oct. Shere.

This is undoubtedly the *Uromyces*—form of *Puccinia graminis*, although I have not hitherto been able to trace the connection. It seems strange that it should have hitherto been unnoticed.

UROMYCES ULMARIÆ. Lev. See *Triphragmium ulmaricæ*.

UROMYCES PRIMULÆ. Lev. See *Puccinia primulæ*.

UROMYCES IRIDIS. Lev. See *Puccinia truncata*.

Gen. 176. *Solidago* Rav. N. 1892
Solidago iris Flessl. Rev. June 1877. p. 152
Asclepiades C. On *Elodea* " " "
trigonetrium C. On *Elodea* " " "
Lespedeza Schw. On *Lespedeza* Mar. 1878 " " 86



Fig. 211.

Spores cylindrical, septate, some separating at the joints, some of a different nature, persistent.—Berk. Outl. p. 333. (Fig. 211.)

1552. Coleosporium tussilaginis. Lev. "Coltsfoot Rust."

On the under surface, prominent, crowded, generally forming circles, becoming very confluent; spores numerous, subovate, orange-yellow.—Lev. *Ann. Sc. Nat. Cooke M.F. t. 8, f. 180, 181. Cooke exs. no. 80. Uredo compransor. Eng. Fl. v. p. 379. (partly). Moug. exs. no. 390.*

On Coltsfoot leaves. Summer. Common. (Fig. 211.)

1553. Coleosporium pingue. Lev. "Tawny Rose Rust."

Spots obliterated; sori effuse, on the nerves and petioles of the leaves; spores ovoid, yellowish-brown.—Lev. *Ann. Sc. Nat. Cooke M.F. p. 212. Uredopinguis. D.C. Fl. Fr. ii. p. 235. U. effusa. Eng. Fl. v. p. 381 (partly).*

On roses, &c.

C. mriatum Lev. On *Rubus* Griseb. 1878 p. 86
apocynaceum Cooke " " 138
 " " 138

1554. Coleosporium petasitis. Lev. "Butterbur Rust."

On the under surface, minute, depressed, spreading, somewhat aggregate, subconfluent, irregular in form; spores oval, orange, or orange-red.—*Lev. Ann. Sc. Nat. Cooke M.F. p. 213. Cooke exs. no. 321. Cooke L.F. no. 45. Uredo compransor. Eng. Fl. v. p. 379. partly. U. petasites. Grev. Fl. ed. p. 441.*

On *Tussilago petasites*. Autumn.

1555. Coleosporium campanulæ. Lev. "Campanula Rust."

Spots obliterated, brown on the opposite side; sori irregular, confluent, plane, on the under surface; spores subglobose, cohering, yellow, at length pale.—*Lev. Ann. Sc. Nat. Cooke M.F. p. 213. Cooke exs. no. 81. Uredo campanulæ. Eng. Fl. v. p. 378. Baxt. exs. no. 41. Berk. exs. no. 336.*

On leaves of various *Campanulæ*. Sept. Oct.

1556. Coleosporium sonchi-arvensis. Lev. "Sow-thistle Rust."

On the under surface, depressed, irregular in form, scattered, partially confluent; spores ovate, reddish-orange.—*Lev. Ann. Sc. Nat. Cooke M.F. t. 8, f. 178-179. Cooke exs. no. 82. Uredo sonchi. Pers. Syn. p. 217. U. compransor. Eng. Fl. v. p. 379 (partly).*

On *Sonchus oleraceus* and *arvensis*. Summer. Common.

1557. Coleosporium rhinanthacearum. Lev. "Cow-wheat Rust."

Spots none, or subferruginous; sori irregular, confluent on the under, rarely on both surfaces; spores subglobose, compact, golden yellow.—*Lev. Ann. Sc. Nat. Cooke M.F. t. 8, f. 176, 177. Cooke exs. no. 299. Uredo rhinanthacearum. Eng. Fl. v. p. 377.*

On *Euphrasia*, *Bartsia*, *Melampyrum*, &c. Aug. Sept. Common.

Gen. 177. MELAMPSORA. Cast.

Fig. 212.



Fig. 213.

Spores of two orders (1), diffuse, globose, or oblong; (2) crowded into a dense, compact mass, with or without a covering, wedge-shaped.—*Berk. Outl. p. 333. (Figs. 212, 213.)*

1558. Melampsora salicina. Lev. "Willow Brand."

SUMMER-SPORES. Epiphyllous or hypophyllous, sori, or heaps of spores scattered, pale orange, bright orange, or cinereous. (June to August.) Ovato-globose, paraphyses capitate, rarely obovate.—*Lecythea caprearum. Lev. Ann. Sc. Nat. Uredo caprearum. Eng. Fl. v. p. 385. U. epitea. Kze. Lec. epitea Ann. N.H. no. 477.*

WINTER-SPORES. Sori epiphyllous, scattered or aggregate, at first yellowish tawny, then brownish, at length nearly black, bullate; spores oblong, closely packed, and laterally compressed.—*Lev. Ann. Sc. Nat. Tul. Ann. Sc. Nat. 4, ser. vol. ii. t. 7, f. 6-7. Cooke M.F. t. 9, f. 191, 192. Cooke exs. no. 85. Cooke L.F. no. 49.*

On *Salix viminalis* and *S. capræa*. Common.

Spores perfected in February. (Fig. 213, winter spores.)

1559. Melampsora betulina. Desm. "Birch Brand."

SUMMER-SPORES. Hypophyllous, sori bright yellow or orange, oblong, cylindrical, or obovate, truncate at the base, echinulate; paraphyses encircling, or intermixed, obovate, smooth, hyaline. *Uredo betulina. U. cylindrica. Eng. Fl. v. p. 385 (partly.) Lecythea betulina. Lev. Ann. Sc. Nat.*

WINTER-SPORES. Sori confluent, of an obscure brown in the winter, becoming of a bright orange when mature; spores elongated, attenuated below, polygonal, ochraceous.—*Lev. Ann. Sc. Nat. Desm. exs. no. 1647. Lib. exs. no. 336. Cooke M.F. t. 9, f. 189, 190. Tul. Ann. Sc. Nat. ser. 4, vol. ii. t. 7, f. 8, 9. Cooke exs. no. 124.*

On leaves of *Betula alba*.

Spores perfected in Jan. and Feb. (Fig. 212, winter spores.)

1560. Melampsora tremulæ. Tul. "Aspen Brand."

SUMMER-SPORES. Hypophyllous; sori punctiform, prominent, or papillæform, numerous; spores tawny-yellow, elliptical, or obovate; paraphyses slender.—*Uredo cylindrica. Eng. Fl. v. p. 385, partly. Lecythea populina. Cooke M.F. p. 206, partly.*

WINTER-SPORES. Sori scattered, at length blackish; spores elongated, compressed, attenuated downwards, yellowish.—*Tul.*

Ann. Sc. Nat. ser. 4, vol. ii. p. 95. Cooke M.F. p. 214. Cooke exs. no. 84. Cooke L.F. no. 48.

On leaves of *Populus tremula*. Common.

Spores perfected during the winter.

1561. *Melampsora populina*. Lev. "Poplar Brand."

Hypophyllous, epiphyllous, or amphigenous.

SUMMER-SPORES. Spores yellow or orange, obovate-oblong, attenuated or truncate, echinulate, paraphyses obovate, capitate, or claviform, abundant in fully ripened sori.—*Uredo longicap-sula* D.C. *U. cylindrica*. *Eng. Fl. v. p. 385, partly. Lecythea populina*. *Lev. Ann. Sc. Nat. Cooke M.F. p. 206. Cooke exs. no. 83.*

WINTER-SPORES. Sori at first tawny-yellow, becoming black during the winter, swelling in the spring, and becoming of a cinnamon colour, on the upper surface of the leaves, roundish or oblong; spores prism-shaped, 5-6 together, yellowish, smooth.—*Tul. Ann. Sc. Nat. 4. ser. vol. 2, t. 7, f. 10. Cooke Micr. Fungi. pl. ix. figs. 195, 196. Cooke exs. no. 83. Cooke L.F. no. 47.*

On leaves of *Populus nigra*. Common.

Spores perfected in February.

1562. *Melampsora euphorbiæ*. Cast. "Spurge Brand."

SUMMER-SPORES. Hypophyllous; sori golden yellow, scattered, distinct, sometimes cauline; spores small, subglobose.—*Uredo euphorbiæ*. *Eng. Fl. v. p. 385. Lecythea euphorbiæ*. *Lev. Ann. Sc. Nat. Cooke M.F. p. 206. Cooke exs. no. 65. Berk. exs. no. 240.*

WINTER-SPORES. Sori becoming black, small, roundish; spores prismatic, membrane thickened above, dark-brown.—*Tul. Ann. Sc. Nat. ser. 4, vol. ii. p. 100. Cooke M.F. pl. ix. figs. 193, 194.*

On leaves and stems of *Euphorbia helioscopia*, *E. exigua*, and other species. Common.

***Melampsora padi*.** This name has been given by some author to a *Melampsora*, on leaves of *Prunus padus*, which we have once met with in Kent. It was noted at the time, but reference to the author and description was not made, hence it cannot be recorded here beyond the present notice.

Gen. 178.

CYSTOPUS, De Bary.

Fig. 215.



Fig. 214.



Receptacle consisting of thick branched threads; conidia concatenate, at length separating, oospores deeply seated on the mycelium.—(Figs. 214, 215.)

1563. Cystopus cubicus. Str. "Goat's-beard White Rust."

Conidia unequal; terminal cell sterile, larger than the rest, membrane thickened, ochraceous, rarely yellowish; fertile cells shortly cylindrical; membrane hyaline; *oospores* globose; episporium, brown, verrucose; warts hollow, round or irregular.—Cooke M.F. pl. x. figs. 201, 202, 210. Cooke exs. no. 86.

On Goat's-beard, Salsify, Scorzonera, &c. Summer and autumn. Common. (Fig. 215.)

1564. Cystopus candidus. Lev. "Crucifer White Rust."

Conidia equal, globose; membrane equal, ochraceous; *oospores* subglobose; episporium yellowish-brown, with irregular obtuse warts; warts solid.—Lev. Ann. Sc. Nat. Berk. Outl. p. 334, partly. Eng. Fl. v. p. 384. Grev. t. 251. Moug. exs. no. 290. Cooke exs. no. 86. Cooke L.F. no. 46. Cooke M.F. pl. x. figs. 198-200, and 205-207.

On shepherd's purse, cabbages, horseradish, and other Cruciferae, Summer. Common. (Fig. 214, conidia & oospore.)

1565. Cystopus lepigoni. De By. "Sandwort White Rust."

Conidia unequal; terminal cell sterile, globose; membrane thickened; fertile cells subglobose or cylindrical; membrane

C. Bliti Bivon On Portulacca Farlow Synops. 429.
C. Amaranthi Sehwa Halsted exsiccata.
C. Portulacae De B. Grev. t. 251 p. 46

Utr. Amaranthi Sehwa. Halst. Synops. 429.

On shepherd's purse, cabbages, horseradish, and other Cruciferae, Summer. Common. (Fig. 214, conidia & oospore.)

hyaline; oospores globose, epispore brown, tubercles minute, irregular, very convex, often resembling spines.—*Cooke M. F. p. 214. Cooke exs. no. 88.*

On *Spergularia rubra*. June.—Sept.

1566. Cystopus spinulosus. De Bary. "Thistle White Rust."

Conidia in time much elongated; sori erumpent, on both surfaces of the leaves, white; oospores globose; epispore brown, tubercles minute, solid, very prominent, often acute and spinulose.—*De Bary, Ann. des Sc. Nat. 1864, xx. p. 133. Cooke exs. no. 89.*

On *Cirsium arvense*. Sept.

Gen. 179.

UREDO, Lev.

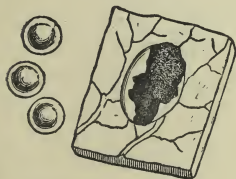


Fig. 216.

Stroma composed of little irregular cells, forming a lentiform disk, whose surface is covered with many layers of cells, each of which encloses a spore; spores simple, always without any appendage.—*Berk. Outl. p. 331. (Fig. 216.)*

* Spores more or less yellow.

1567. Uredo potentillarum. D.C. "Potentilla Uredo."

Spots yellowish; sori subrotund and oval, bullate, aggregate, open, confluent; spores subglobose, subcoherent, orange.—*D.C. Fl. Fr. vi. p. 81. Eng. Fl. v. p. 382, partly. Cooke M.F. p. 204. Cooke exs. no. 120. Moug. exs. no. 91.*

On various *Rosaceæ*. Common.

1568. Uredo saxifragarum. D.C. "Saxifrage Uredo."

Spots pallid; sori subrotund and oval, raised, scattered and aggregate on the under surface; epidermis ruptured, persistent; spores subglobose, yellow.—*D.C. Fl. Fr. vi. p. 87. Eng. Fl. v. p. 381. Cooke M.F. p. 204.*

On various *Saxifrages*.

1569. *Uredo filicum.* *Desm.* "Fern Uredo."

Spots yellowish ; sori subrotund, bullate, scattered and aggregate on the under surface ; epidermis at length bursting ; spores subglobose, yellow.—*Desm. exs. no.* 530. *Eng. Fl.* v. p. 383. *Cooke M.F.* p. 204. *Sow. t.* 320. *Moug. exs. no.* 289. *Berk. exs. no.* 339.

On fronds of ferns (*Cystopteris*, &c.).

1570. *Uredo pustulata.* *P.* "Willow-herb Uredo."

Spots yellowish ; sori subrotund, minute, closed, scattered and confluent on both surfaces ; spores globose, yellow.—*Pers. Syn.* p. 219. *Eng. Fl.* v. p. 381. *Cooke M.F.* p. 204. *Cooke exs. no.* 210. *Cooke L.F.* no. 29.

On *Epilobium palustre*, &c.

1571. *Uredo hypericorum.* *D.C.* "St. John's-wort Uredo."

Spots yellowish ; sori subrotund, small, bullate, distinct, scattered on the under surface ; epidermis at length bursting ; spores subglobose, cohering, orange.—*D.C. Fl. Fr.* vi. p. 81. *Eng. Fl.* v. p. 380. *Cooke M.F. t.* 8, f. 174, 175. *Cooke exs. no.* 118. *Baxt. exs. no.* 42.

On various species of *Hypericum*. August.

1572. *Uredo caryophyllacearum.* *Johnst.* "Stitch-wort Uredo."

Spots yellowish ; sori subglobose, scattered and aggregate, minute, generally on the under surface ; epidermis closed ; spores oval, at length yellow.—*Johnst. Fl. Berw.* ii. p. 199. *Eng. Fl.* v. p. 381. *Cooke M.F.* p. 204. *Cooke exs. no.* 60. *Cooke L.F.* no. 30.

On various *Caryophyllaceæ*. Autumn.

1573. *Uredo quercûs.* *Brond.* "Oak-leaf Uredo."

On the under surface ; sori yellow, then orange, minute, ovate, and orbicular, slightly prominent, scattered, solitary or agglomerated into minute patches, surrounded by the ruptured epidermis ; spores subglobose, pellucid, not cohering.—*Eng. Fl.* v. p. 383. *Cooke M.F.* p. 205. *Cooke exs. no.* 281. *Berk. exs. no.* 239.

On green oak leaves. Sept.

We have always found it on young oak scrub the second year after it has been cut down, never on trees. The sori are very much scattered, and but few on a leaf.

1574. Uredo padi. *Kze.* "Bird-cherry Uredo."

Spots purplish; sori subrotund, small, aggregate, hypogenous; epidermis at length ruptured; spores coherent, subglobose.—*Kze. exs. no. 187. B. & Br. Ann. N.H. 1865, xv. p. 401, no. 1045. U. porphyrogenita. Link. Sp. ii. p. 31. Cooke M.F. p. 205.*

On leaves of *Prunus padus*. Scotland.

1575. Uredo vacciniorum. *P.* "Bilberry Uredo."

Spots yellow-brown; sori subrotund, minute, aggregate, and scattered, on the under surface of the leaves; epidermis seldom ruptured; spores ovoid, yellowish.—*Eng. Fl. v. p. 378. Lk. Sp. ii. p. 15. Cooke M.F. p. 205. Cooke exs. no. 119.*

On *Vaccinium myrtillus* and *V. vitis-idaea*.

[Low. Carolina.]

1576. Uredo confluens. *D.C.* "Confluent Uredo."

On the under surface, depressed, yellow, oblong, concentric, at length confluent; spores nearly oval.—*D.C. Fl. Fr. ii. p. 233. Eng. Fl. v. p. 383. Cooke. M.F. t. 7, f. 133, 134. Cooke exs. no. 117.*

On *Mercurialis perennis* and *M. annua*. May. June. Common.

var. α. euonymi. Spots yellowish; sporidia ovoid and slightly coherent, tawny-yellow.—*Mart. Fl. Mosq. p. 230.*

On leaves of *Euonymus Europæus*.

var. β. orchidis. Spots reddish-brown; sporidia nearly oval, bright yellow.—*Mart. Fl. Mosq. 229. Cooke exs. no. 61. Uredo confluens, γ. Orchidis. Alb. & Sch. p. 122. Uredo circinalis, α. Orchidis, Strauss. Wett. Ann. ii. 88. Cæoma orchidum. Lk. Sp. Pl. ii. p. 9.*

On leaves of *Listera ovata* and *Orchis latifolia*.

1577. Uredo empetri. *D.C.* "Crowberry Uredo."

Hypogenous; spots obliterated; sori oval, scattered, the epidermis at first convex, afterwards ruptured and concave; sporidia ovoid or subglobose, bright yellow.—*D.C. Fl. Fr. vi. p. 87. Moug. exs. no. 391. Cæoma empetri. Lk. Sp. Pl. ii. p. 16. Cooke Seem. Journ. iv. p. 99.*

On *Empetrum nigrum*. May. N. Wales.

U. solidaginis. Schw. Inuvillen 1877 p. 151
" luminatum Schw. On Rubus.
" ribicola Krz. On Ribes Inuvilla Mar. 1878 p. 86
" Smilicis Schw. On Smilax
" Citri Cooke On Quercus aëranticum " 138

1578. Uredo tropæoli. *Desm.* "Tropæolum Uredo."

Hypogenous; spots pale yellow; sori minute, roundish, scattered, or confluent; sporidia ovoid or subglobose, orange.—*Desm. Ann. des Sc. Nat.* 1836, vi. p. 243. *Desm. exs. ed. i. no. 837, ed. ii. no. 37. Cooke Seem. Journ.* iv. p. 97.

On leaves of *Tropæolum*. Oct.

1579. Uredo alliorum. *D.C.* "Garlic Uredo."

Spots obliterated; sori linear, oblong, and oval, on both surfaces; spores ovoid or subglobose, yellow or whitish.—*D.C. Fl. Fr.* vi. p. 82. *Eng. Fl.* v. p. 376, partly. *Cooke M.F.* p. 205.

On various species of *Allium*.

* * Spores brown.

1580. Uredo statices. *Desm.* "Sea Lavender Uredo."

Sori few and scattered, orbicular or oval; spores globose, brown.—*Berk. Outl.* p. 331. *Cooke M.F.* p. 205.

On various species of *Statice*.

1581. Uredo bifrons. *Grev.* "Twin-faced Uredo."

On both surfaces of the leaves, often opposite, scattered, round, light-brown, girt with the remains of the epidermis; spores globose.—*Grev. Fl. ed.* p. 435. *Eng. Fl.* v. p. 383. *Cooke M.F. t. 7. f.* 137-139.

On *Rumex acetosa* and *acetosella*. July.—Sept.

UREDØ CIRCÆÆ. *A. & S.* See *Puccinia circææ*.

Gen. 180.**TRICHOBASIS, Lev.**

Fig. 217.

to be forms of other fungi are inserted there.

Spores free, attached at first to a short peduncle, caducous.—*Berk. Outl.* p. 332. (Fig. 217.)

It is very probable that none of the species here recorded under this genus are autonomous, but until this is satisfactorily traced, they are included. Species known

* Spores yellow.

1582. Trichobasis glumarum. *Lev.* "Glume Rust."

Sori minute, round, scarcely convex, subgregarious, often confluent; spores globose or subovoid, orange, not pedicellate; epispore smooth.—*Lev. Ann. Sc. Nat. Cooke M.F. p. 208. Berk. Outl. p. 332.*

On the glumes of Cereals. August.

1583. Trichobasis symphyti. *Lev.* "Comfrey Rust."

Sori minute, very numerous, scattered, roundish, then confluent; epidermis ruptured, scarcely conspicuous around the margin; spores subglobose, pallid orange.—*Lev. Ann. Sc. Nat. 1847. Cooke M.F. p. 208. Berk. Outl. p. 332. Uredo symphyti. D.C. Fl. Fr. v. p. 87. Berk. exs. no. 320. Ann. N.H. no. 475.*

On Comfrey. May.

1584. Trichobasis pyrolæ. *B.* "Winter-green Rust."

Spots yellowish brown on the opposite side; sori globose, minute, scattered or aggregate, on the under surface; epidermis generally closed; spores subglobose, yellow.—*Berk. Outl. p. 332. Cooke M.F. p. 208. Uredo pyrolæ. Grev. Fl. ed. p. 440. Link. Sp. ii. p. 15.*

On *Pyrola rotundifolia*, &c.

1585. Trichobasis petroselini. *B.* "Parsley Rust."

Spots yellowish; sori subrotund and oval, confluent on both surfaces; epidermis at length ruptured; spores globose or subglobose, occasionally obsoletely pedicellate, pale yellow.—*Berk. Outl. p. 332. Lev. Ann. Sc. Nat. Cooke M.F. p. 208. Cooke L.F. no. 34. Uredo petroselini. D.C. Fl. Fr. ii. p. 597. Eng. Fl. v. p. 379. U. æcidiiformis. Grev. Fl. ed. p. 441.*

On various *Umbelliferae*, as *Smyrnum*, *Scandix*, &c.

Most probably this is the *Uredo* form of *Puccinia Smyrni*.

* * Spores brown.

1586. Trichobasis oblongata. *B.* "Luzula Rust."

Spots oblong, often confluent, yellow-brown; sori elliptic, on both surfaces; epidermis closed; spores brown, obtuse at either

S. erotonis Cooke Gravilea 21578 p 137

extremity.—*Berk. Outl. p. 208. Cooke M.F. t. 7, f. 158, 159. Uredo oblongata. Grev. t. 12. Eng. Fl. v. p. 376.*

On *Luzulæ*. May.—July.

1587. Trichobasis betæ. *Lev.* "Beet-leaf Rust."

Spots yellow; heaps subrotund and oval, scattered and concentric, on the upper surface; epidermis at length bursting; spores subglobose, shortly pedicellate, brown.—*Berk. Outl. p. 208. Cooke M.F. p. 209. Cooke exs. no. 70. Uredo Betæ. Pers. Syn. p. 220. Eng. Fl. v. p. 377. Berk. exs. no. 60. Cooke L.F. no. 39.*

On leaves of *Beta vulgaris*. Aug. Sept. Common.

1588. Trichobasis suaveolens. *Lev.* "Thistle Rust."

Spots obliterated, yellow on the opposite side; sori subrotund, nearly plane, scattered, at length confluent, on the under surface, surrounded by the ruptured epidermis; spores globose, brown.—*Berk. Outl. p. 208. Cooke M.F. t. 7, f. 151, 153. Cooke exs. no. 73. De Bary Brandpilze, t. iii. f. 1-4. Uredo suaveolens. Pers. Syn. p. 221. Eng. Fl. v. p. 379.*

On leaves of *Cnicus arvensis*, &c. Summer. Common.

It generally covers the whole under surface of the leaves, and has a peculiar odour, more or less strong.

1589. Trichobasis geranii. *B.* "Geranium Rust."

Spots yellowish; sori subrotund, nearly plane, scattered or confluent; spores subglobose, brown.—*Berk. Outl. p. 208. Cooke M.F. p. 210. Uredo geranii. D.C. Fl. Fr. vi. p. 73. Grev. t. 8. Eng. Fl. v. p. 380. Sow. t. 398, f. 5.*

On various geraniums.

1590. Trichobasis hydrocotyles. *Cooke.* "Fluke-wort Rust."

Without definite spots; sori chiefly on the upper, sometimes on the under surface, scattered, variable, roundish, erumpent, surrounded by the ruptured epidermis; spores subglobose, at length brown; epispore rough with minute tubercles.—*Cooke Seem. Journ. Bot. ii. p. 344, M.F. p. 209, t. 8, f. 168, 169. Cooke exs. no. 69. Uredo Hydrocotyles. Bertero. Mont. Fl. Fernand. no. 59. Fl. Chil. viii. p. 50. Ann. Sc. Nat. 1835. Mont. Syll. p. 315. Desm. exs. no. 2123. Rav. Fung. Car. Cooke L.F. no. 44.*

On *Hydrocotyle vulgaris*. July.—Sept. [S. Carolina.]

Y. juncei Str

1591. Trichobasis parnassiæ. Cooke. "Grass of Parnassus Rust."

On both surfaces of the leaves; sori at first bullate, at length rupturing the epidermis, scattered, often confluent; spores globose or nearly so, rather large, tawny brown.—Cooke *Seem. Journ. Bot.* ii. p. 344. Cooke *M.F.* p. 210. Cooke *exs.* no. 74. *Uredo parnassiæ.* West. *Bull. de Brux.* xix. no. 87. *Herb. Crypt. Belge.* no. 676. *Ann. N.H.* no. 1046.

On *Parnassia palustris.* Sept. Norfolk.

TRICHOBASIS RUBIGO-VERA. Lev. } See *Puccinia graminis.*

TRICHOBASIS LINEARIS. Lev.

TRICHOBASIS SENECTIONIS. Berk. See *Puccinia glomerata.*

TRICHOBASIS CARICINA. Berk. See *Puccinia striola.*

TRICHOBASIS SCILLARUM. Berk. See *Uromyces concentrica.*

TRICHOBASIS CICHORACEARUM. Lev. See *Puccinia compositarum.*

TRICHOBASIS ARTEMISIÆ. Berk. See *Puccinia discoidearum.*

TRICHOBASIS LABIATARUM. Lev. See *Puccinia menthæ.*

TRICHOBASIS LYCHNIDEARUM. Lev. See *Puccinia lychnidearum.*

TRICHOBASIS UMBELLATARUM. Lev. See *Puccinia umbelliferarum.*

TRICHOBASIS HERACLEI. Berk. See *Puccinia heraclei.*

TRICHOBASIS FABÆ. Lev. See *Puccinia fabæ.*

TRICHOBASIS GALII. Lev. See *Puccinia galiorum.*

TRICHOBASIS POLYGONORUM. Berk. See *Puccinia polygonorum.*

TRICHOBASIS VINCÆ. Berk. See *Puccinia vincæ.*

TRICHOBASIS VIOLARUM. Berk. See *Puccinia violarum.*

TRICHOBASIS EPILOBII. Berk. See *Puccinia pulverulenta.*

Gen. 181. LECYTHEA, Lev.

Stroma surrounded or sprinkled with elongated abortive spores. Spores free, invested with their mother cell, or concatenate.—Berk. *Outl.* p. 334.

a. Spores free.

1592. Lecythea mixta. Lev. "Orange Willow Rust."

Spots yellow; sori subrotund, aggregate, confluent, effuse, permanently surrounded by the ruptured epidermis; spores ob-

long and pyriform, orange.—*Lev. Ann. Sc. Nat.* 1847, p. 374. *Ann. N.H.* no. 478. *Cooke M.F.* p. 206. *Cæoma mixtum.* *Link. Berk. exs.* no. 120.

On both surfaces of the leaves of willows.

1593. *Lecythea saliceti.* *Lev.* “Common Willow Rust.”

Spots yellowish; sori subrotund, solitary, or in circles, surrounded by the ruptured epidermis; barren spores subglobose and pedicellate or pyriform, fertile spores subglobose, orange.—*Lev. Ann. Sc. Nat.* *Cooke M.F.* p. 207. *Berk. Outl.* p. 334. *Uredo saliceti.* *Eng. Fl.* v. p. 385.

On the under surface of willow leaves. Common.

1594. *Lecythea Baryi.* *Berk.* “De Bary’s rust.”

Sori few; cystidia with an abrupt globose head; spores subglobose.—*Berk. Ann. N.H.* 755. *Cooke M.F.* p. 207. *Berk. Outl.* p. 334. *Epitea. de Bary Brand t.* 4, f. 4.

On leaves of *Brachypodium pennatum.* Rare. Gopsal.

1595. *Lecythea valerianæ.* *Berk.* “Valerian Rust.”

Spots yellowish; sori subrotund, small, confluent, sometimes circinating; epidermis at length bursting; spores reddish-brown, subglobose, or clavate, shortly pedicellate.—*Lev. Ann. Sc. Nat.* *Cooke M.F.* p. 207. *Cooke exs.* no. 63. *Berk. Outl.* p. 334. *Cooke L. F.* no. 32. *Uredo valerianæ.* *D. C. Fl. Fr.* v. p. 68. *Berk. exs.* no. 349. *Ann. N.H.* no. 474.

On *Valeriana officinalis.* August.

c. Spores concatenate—(*Podosporium.* *Lev.*)

1596. *Lecythea lini.* *Lev.* “Flax Rust.”

Spots yellowish; sori subrotund, scattered, surrounded by the ruptured epidermis; spores globose or pyriform, sometimes pedicellate.—*Lev. Ann. Sc. Nat.* *Cooke M.F.* t. 8, f. 165-167. *Berk. Outl.* p. 334. *Uredo lini.* *D. C. Fl. Fr.* ii. p. 234. *Moug. exs.* no. 90. *Grev. t.* 31. *Eng. Fl.* v. p. 384. *Desm. exs.* no. 675. *Berk. exs.* no. 118.

On *Linum catharticum.* July.

1597. *Lecythea ruborum.* *Lev.* See *Phragmidium bulbosum.*

- LECYTHEA ROSÆ. *Lev.* See *Phragmidium mucronatum*.
 LECYTHEA POPULINA. *Lev.* See *Melampsora populina*.
 LECYTHEA EUPHORBIAE. *Lev.* See *Melampsora euphorbiae*.
 LECYTHEA EPITEA. *Lev.* See *Melampsora salicina*.
 LECYTHEA GYROSA. *Lev.* See *Phragmidium gracile*.
 LECYTHEA CAPREARUM. *Lev.* See *Melampsora salicina*.
S. ovata Strauss. On *Populus grandidentata*. 23rd N.Y.R. p. 58
S. cylindrica ^{see} *Populus* ~~*monolifera*~~ " " "

Order XVII. ÆCIDIACEI.

Peridium distinctly cellular.—*Berk. Outl.* p. 336.

Peridium single.

Elongated.

Separating in threads *Ræstelia*.

Rupturing irregularly *Peridermium*.

Abbreviated, or semi-immersed *Æcidium*.

Immersed *Endophyllum*.

Peridium double, sessile *Graphiola*.

Gen. 132.

RÆSTELIA, Reb.

Fig. 218.

Peridium elongated, at length opening by lateral fissures, or a terminal lacerated mouth. *Spermatogones* on the opposite surface, on the same or on different leaves. (Fig. 218.)

1597. Ræstelia cancellata. Reb. "Pear-leaf Ræstelia."

SPERMOGONES. Spots yellow or orange, with bluntish conical projections, which are at length blackish; spermatia minute, oozing out at the apex, like an orange jelly.—*Myxosporium colliculosum. Berk. Outl.* p. 325. *Sow. t.* 409.

PROTOSPORES. Spots yellow, then red, prominent; peridia split to the base into lacinæ, which remain united at the apex, on the same or on different leaves as the *Spermatogones*.—*Reb. Fl. Neom.* p. 330. *Cooke M.F. t.* 2, f. 20, 21. *Seem. Journ.* ii. p. 33. *Cooke exs.* no. 332. *Fckl. exs.* no. 283. *Berk. exs.* no. 58. *Kunze.*

R. aurantiaca Ak. On *Crataegus* Bru. Dec. 78 p. 46

exs. no. 84. Sow. t. 410. Eng. Fl. v. p. 373. Moug. exs. no. 184. Kl. exs. no. 97. Gard. Chron. 1862, p. 689.

On pear leaves. Autumn.

[Maine, U.S.]

The *Podisoma sabinae* is related to this plant, according to Cæsted, as one of its forms—see no. 1517. ante.

1598. Ræstelia cornuta. Tul. "Horn-like Ræstelia."

SPERMOGONES. Spots rusty-brown, usually distinct from the tufts of peridia; spermatia white.

PROTOSPORES. Spots rusty-brown; peridia cylindrical, slightly curved, yellowish-brown; spores greyish, at length brown.—*Cooke M.F. t. 2, f. 18, 19. Cooke exs. no. 1. Fckl. exs. no. 284. Seem. Journ. ii. p. 33. Kl. exs. no. 96. Æcid. cornutum. Eng. Fl. v. p. 373. Sow. t. 319. Grev. t. 180. Moug. exs. no. 183.*

On the under surface of the leaves of the mountain ash (*Pyrus aucuparia.*) August. Not common. (Fig. 218, enlarged.)

1599. Ræstelia lacerata. Tul. "Fringed Ræstelia."

SPERMOGONES.

PROTOSPORES. Peridia clustered in tufts, brown, elongated, splitting to the base in segments; spores light brown.—*Cooke M.F. t. 2, f. 22-26. Cooke exs. no. 2. Fckl. exs. no. 286. Berk. exs. no. 111. Seem. Journ. ii. p. 33. Gard. Chron. 1861, p. 336. Cooke L.F. no. 50. Æcid. laceratum. Sow. t. 318. Eng. Fl. v. p. 373. Grev. t. 209. Rav. exs. v. no. 96.*

On the under surface of the leaves, and on the petioles and fruit of the Hawthorn. Common. May to July. [New York, &c.]

This species is said also to be in some manner associated with *Podisoma Juniperi*—see no. 1516. ante.

Gen. 183.

PERIDERMIIUM, Chev.



b. Fig. 219. a.

Peridium elongated, at length bursting irregularly. *Spermatia* scattered, conspicuous.—(Fig. 219.)

1600. Peridermium pini. Chev. "Scotch fir Peridermium."

SPERMOGONES. Vernal or autumnal, or both; spermatia large, white.

PROTOSPORES. Peridia oblong, scattered, large; spores orange, abundant.—*Cooke M.F.t. 2, f. 27, 28. Seem. Journ. ii. p. 34. Fckl. exs. no. 288. Æcidium pini. Eng. Fl. v. p. 374. Grev. t. 7. Moug. exs. no. 186. Rav. exs. i. no. 93.*

On leaves and young branches of Scotch fir. Summer.

(Fig. 219, *a.* nat size, *b.* magnified.)

1601. Peridermium elatinum. Lk. "Silver Fir Peridermium."

SPERMOGONES.

PROTOSPORES. Simple, immersed; peridia elliptic, pallid; sporidia orange.—*Kze. exs. no. 141. Seem. Journ. ii. p. 34. Cooke M.F.p. 190. Fckl. exs. no. 290.*

On silver fir, altering both foliage and ramification. Not common.

1602. Peridermium columnare. A. & S. "Columnar Peridermium."

SPERMOGONES.

PROTOSPORES. Simple, slender, naked, cylindrical, elongated, lacerated at the apex, white; spores orange.—*A. & S. Consp. 121, t. 5, f. 4. Kze. exs. no. 10. Cooke M.F. 2nd. ed. p. 223. Cooke exs. no. 214.*

On *Picea*. Sept. Near Torquay.

Gen. 184. ÆCIDIUM, Pers.

Fig. 220.

Peridium seldom elongated, opening by a terminal mouth, surrounded by a fringe of recurved teeth, or when short bursting irregularly. Spores disposed in chains. Spermatia on the same or the opposite surface, clustered or scattered, central or intermixed.—(Fig. 220.)

SECT. I.—Peridia scattered (not collected in tufts or clusters).

- 1603. *Æcidium leucospermum.* D.C. “White-spored
Cluster Cups.”**

SPERMOGONES.

PROTOSPORES. Spots yellowish; peridia scattered, often covering the whole under surface; spores white, ovate.—*D.C. Fl. Fr. p. 239. Berk. exs. no. 226. Seem. Journ. ii. p. 34. Cooke M.F. t. 1, f. 4-6. Cooke exs. no. 3. Fckl. exs. no. 1930. Eng. Fl. v. p. 371. Moug. exs. no. 185. Buxt. exs. no. 89. Berk. exs. no. 226. Lycoperdon anemones. Pult. Linn. Trans. ii. p. 311.*

On both sides of leaves of *Anemone nemorosa*. June. Common.

- 1604. *Æcidium quadrifidum.* D.C. “Four-lobed Cluster
Cups.”**

SPERMOGONES.

PROTOSPORES. Spots brownish; peridia scattered, occupying almost the entire under surface; spores brown, subglobose.—*D.C. Fl. Fr. vi. p. 90. Eng. Fl. v. p. 371. Seem. Journ. ii. p. 34. Cooke M.F. p. 190. Cooke exs. no. 101. Berk. exs. no. 227.*

On the under surface of leaves of *Anemone*, in gardens. April. May.

The lobes at the mouth of the peridium are not constantly four.

- 1605. *Æcidium albescens.* Grev. “Moschatel Cluster Cups.”**

SPERMOGONES.

PROTOSPORES. Leaf blistered, whitish, scattered; peridia white, split into a few large teeth; spores yellowish-white.—*Grev. Fl. ed. p. 444. Eng. Fl. v. p. 372. Desm. exs. no. 555. Seem. Journ. ii. p. 34. Cooke M.F. p. 190.*

On leaves and petioles of *Adoxa moschatellina*. April.

- 1606. *Æcidium epilobii.* D.C. “Willow-herb Cluster Cups.”**

SPERMOGONES.

PROTOSPORES. Spots obliterated; peridia scattered, at length oval, wider above; spores orange, at length brown.—*D.C. Fl. Fr. ii. p. 238. Eng. Fl. v. p. 372. Seem. Journ. ii. p. 35. Cooke M.F. p. 190. Cooke exs. no. 4. Fckl. exs. no. 1927. Berk. exs. no. 348. Cooke L.F. no. 52.*

On the under surface of leaves of *Epilobium hirsutum*, *E. montanum*, and *E. palustre*. June.—Aug. Common. [Cincinnati.]

- 1607.** **Æcidium thesii.** *Desm.* “Bastard-toad flax Cluster Cups.”

SPERMOGONES.

PROTOSPORES. Spots obliterated; peridia scattered or biserial, short, cylindrical, margin irregularly toothed, erect; spores yellowish, then dingy.—*Cooke M.F. t. 3. f. 50, 51. B. & Br. Ann. N.H. no. 1048. Berk. exs. no. 318.*

On *Thesium humifusum*. May.—Oct.

- 1608.** **Æcidium soldanellæ.** *Hornsh.* “Soldanella Cluster Cups.”

SPERMOGONES.

PROTOSPORES. Spots obliterated; peridia solitary, scattered over the inferior surface; spores orange.—*Moug. exs. no. Eng. Fl. v. p. 369. Seem. Journ. ii. p. 35. Cooke M.F. p. 191.*

On leaves of *Soldanella alpina*. Botanic Garden, Glasgow.

- 1609.** **Æcidium tragopogonis.** *Pers.* “Goat’s-beard Cluster Cups.”

SPERMOGONES.

PROTOSPORES. Spots obliterated; peridia scattered, torn, wider above; spores orange, at length black.—*Pers. Syn. p. 211. Eng. Fl. v. p. 370. Sow. t. 397, f. 2. Moug. exs. no. 388. Seem. Journ. ii. p. 35. Cooke M.F. t. i. f. 1-3. Cooke exs. no. 5. Cooke L.F. no. 51.*

On stems, leaves and involucre of goat’s-beard. May. June. Common.

- 1610.** **Æcidium euphorbiæ.** *Pers.* “Spurge Cluster Cups.”

SPERMOGONES. Preceding the peridia, on the same or different leaves.

PROTOSPORES. Spots obliterated, leaf thickened; peridia scattered or crowded, distinct; spores orange.—*Pers. Syn. p. 211. Eng. Fl. v. p. 374. Moug. exs. no. 87. Seem. Journ. ii. p. 35. Cooke M.F. p. 191. Cooke exs. no. 6. Fckl. exs. no. 279. Berk. exs. no. 229.*

On the under surface of leaves of spurge. May. June. Common. [United States.]

1611. *Æcidium dracontii*. Schwein. "Arum Cluster Cups."

SPERMOGONES.

PROTOSPORES. Spots pallid, extensively scattered over the leaves, sometimes nearly covering them; peridia large, scattered, abundant, disposed without order on the spots; spores orange. *Schwz. Trans. Am. Phil. Soc.* 1834. *Seem. Journ.* ii. p. 41. *Cooke M.F.* p. 194.

On leaves of *Arum triphyllum* in gardens. Rare.

[United States.]

Dr. Curtis refers this to *Æcidium ari. B.* but we think erroneously.

Sect. 2. Peridia in tufts or clusters.

a. Elongatæ.

1612. *Æcidium berberidis*. Pers. "Berberry Cluster Cups."

SPERMOGONES.

PROTOSPORES. Spots roundish, bright red; subiculum thickened; peridia in subrotund or oval patches, often elongated; spores orange.—*Pers. Syn.* p. 209. *Eng. Fl.* v. p. 372. *Sow. t.* 397, f. 5. *Moug. exs.* no. 86. *Grev. t.* 97. *Kl. exs.* no. 95. *Seem. Journ.* ii. p. 35. *Cooke M.F. t.* 1, f. 7-9. *Kze. exs.* no. 14. *Fckl. exs.* no. 278.

On leaves, peduncles, and fruit of berberry. May.—July. Common.

[United States.]

(Fig. 220, enlarged.)

Said to be a condition of the corn mildew—*Puccinia graminis*—see no. 1462. ante.

1613. *Æcidium crassum*. Pers. "Buckthorn Cluster Cups."

SPERMOGONES.

PROTOSPORES. Spots yellow-brown, subiculum thickened; peridia crowded into a roundish heap, at first globose, yellow, at length open; spores orange.—*Pers. Syn.* p. 208. *Eng. Fl.* v. p. 373. *Pers. Ic. & Desc. t.* 10, f. 1, 2. *Moug. exs.* no. 89. *Seem. Journ.* ii. p. 36. *Cooke M.F.* p. 191. *Cooke exs.* no. 7. *Fckl. exs.* no. 277. *Berk. exs.* no. 110. *Cooke L.F.* no. 53. *Æcid. rhamni. Pers. Obs. t.* 2, f. 4.

On *Rhamnus catharticus* and *R. frangula*. Common.

[United States.]

Said by DeBary to be *Puccinia coronata*.

var. β . **phillyreæ**. Spots obliterated.—*Æcidium phillyreæ*. *D.C. Fl. Fr.* vi. p. 96.

On leaves and young shoots of *Phillyrea*. Chichester.

var. γ . **periclymeni**. *D.C.* Spots variegated, yellow and brown.—*Æcidium periclymeni*. *D.C. Fl. Fr.* ii. p. 597. *Eng. Fl.* v. p. 370. *Seem. Journ.* ii. p. 36. *Cooke M.F.* p. 191. *Cooke exs.* no. 102. *Fckl. exs.* no. 276. *Cooke L.F.* no. 54.

On leaves of honeysuckle. June.—August.

β . Poculiformæ.

1614. *Æcidium calthæ*. Grev. “Marsh Marigold Cluster Cups.”

SPERMOGONES.

PROTOSPORES. Aggregate; peridia somewhat campanulate, with numerous minute marginal teeth; spores bright orange, subglobose or oval.—*Grev. Fl. Ed.* p. 446. *Eng. Fl.* v. p. 371. *Seem. Journ.* ii. p. 36. *Cooke M.F.* p. 191.

On leaves and petioles of *Caltha palustris*. Spring. Rare.

Margin of peridia pale and brittle.—*Grev.*

1615. *Æcidium ranunculacearum*. D.C. “Crowfoot Cluster Cup.”

SPERMOGONES. Preceding the peridia, or simultaneous, and occupying the centre of the clusters; spermatia minute.

PROTOSPORES. Spots obliterated; subiculum thickened; peridia in irregular heaps, densely crowded together; spores orange.—*D.C. Fl. Fr.* vi. p. 97. *Sow. t.* 397, f. 2. *Seem. Journ.* ii. p. 36. *Cooke M.F. t.* 2, f. 12, 14. *Cooke exs.* no. 8. *Fckl. exs.* no. 263-265. *Cooke L.F.* no. 55.

On leaves of various *Ranunculaceæ*. Spring. Common.

[Mid. Carolina.]

var. α . **aquilegiæ**. Clusters small, scattered.—*Æcid. aquilegiæ*. *Pers. Ic. Pict.* iv. t. 23, f. 4.

On leaves of columbine. Shere.

var. β . **clematidis**. Spots brownish.—*D.C. Fl. Fr.* ii. p. 243. *Rabh. F.E.* no. 284.

On leaves, &c., of *Clematis vitalba*. [Low. & Mid. Carolina.]

- *C. ranunculi* Schreb. A.Y. 23rd - 1859.

var. γ . **thalictri**. Grev. Clusters roundish; peridia oblong.—*Fckl. exs. no. 265. Æcidium thalictri. Grev. t. 4. Eng. Fl. v. p. 371. Seem. Journ. ii. p. 35. Cooke M.F. p. 191.*

On leaves of *Thalictrum minus*, *alpinum*, &c.

The form on leaves of *Ranunculus ficaria* is one of the earliest of spring fungi in making its appearance.

1616. Æcidium galii. Pers. “Bed-straw Cluster Cups.”

SPERMOGONES?

PROTOSPORES. Spots linear or oblong, obscurely brown; peridia scattered, rarely aggregate, dentate, whitish; spores egg-yellow.—*Pers. Syn. p. 207. Berk. Ann. N.H. no. 490. Seem. Journ. ii. p. 37. Cooke M.F. t. 2, f. 15-17. Cooke exs. no. 9. Fckl. exs. no. 280.*

On leaves of *Galium verum* and *G. mollugo*.

1617. Æcidium bunii. D.C. “Pig-nut Cluster Cups.”

SPERMOGONES?

PROTOSPORES. Spots obliterated; subiculum thickened; peridia in irregular subrotund or oval heaps; spores orange.—*D.C. Fl. Fr. vi. p. 96. Eng. Fl. v. p. 370. Seem. Journ. ii. p. 37. Cooke M.F. p. 192. Fckl. exs. no. 1928.*

On *Bunium bulbocastanum* and *Pimpinella saxifraga*. Spring.

var. β . **poterii**. Cooke. Peridia circinating or scattered. *Æcidium poterii. Cooke Seem. Journ. ii. p. 39, t. 14. f. 3. Cooke M.F. p. 193.*

On leaves and petioles of *Poterium sanguisorba*. May. June. Darenth.

1618. Æcidium valerianacearum. Duby. “Valerian Cluster Cups.”

SPERMOGONES?

PROTOSPORES. Hypogenous, rarely cauline; spots on a thickened subcircular or oblong base; peridia scattered, more or less crowded, cup-shaped, tawny, margin erect, denticulate; spores dirty yellow.—*Duby. Syn. p. 908. Eng. Fl. v. p. 370. Seem. Journ. ii. p. 37. Cooke M.F. p. 192. Cooke exs. no. 103. Fckl. exs. no. 273. Cooke L.F. no. 56.*

On *Valeriana officinalis* and *V. dioica*.

1619. *Æcidium asperifolii*. Pers. "Borage Cluster Cups."

SPERMOGONES ?

PROTOSPORES. Clusters subrotund, on a slightly thickened subiculum; peridia scattered; spores orange.—*Pers. Syn. p.* 208. *Berk. Ann. N.H. no.* 255. *Seem. Journ. ii. p.* 37. *Cooke M.F. p.* 192. *Cooke exs. no.* 325. *Fckl. exs. no.* 274.

On leaves of various *Boraginaceæ*. Summer.

The parts of the leaves on which it occurs are rendered concave on one side and convex on the other.

1620. *Æcidium grossulariæ*. D.C. "Gooseberry Cluster Cups."

SPERMOGONES ?

PROTOSPORES. Spots yellow, bright red on the opposite side, with a yellow border; peridia crowded in roundish heaps, at length brown, and surrounded with a brown area; spores orange.—*D.C. Fl. Fr. vi. p.* 92. *Grev. t.* 62. *Eng. Fl. v. p.* 372. *Moug. exs. no.* 287. *Seem. Journ. ii. p.* 37. *Cooke M.F. p.* 192. *Cooke exs. no.* 10.

On leaves and fruit of gooseberry and currant. May. June.
Common. [Pennsylvania.]

Very variable in the frequency of its occurrence. Some seasons it is very common; in others scarce a specimen can be found.

1621. *Æcidium urticæ*. D.C. "Nettle Cluster Cups."

SPERMOGONES ?

PROTOSPORES. Spots obliterated; subiculum thickened; peridia disposed in elongated or subrotund heaps, at first subglobose, then gaping; spores orange.—*D.C. Fl. Fr. ii. p.* 243. *Eng. Fl. v. p.* 374. *Moug. exs. no.* 389. *Desm. exs. no.* 676. *Seem. Journ. ii. p.* 37. *Cooke M.F. t. 1, f.* 10, 11. *Cooke exs. no.* 11. *Fckl. exs. no.* 281. *Berk. exs. no.* 112.

On leaves and stems of nettles, distorting them very much. June. Common. [Mid. Carolina.]

1622. *Æcidium behenis*. D.C. "Bladder-campion Cluster Cups."

SPERMOGONES ?

PROTOSPORES. Spots yellow, brown on opposite side; peridia somewhat circinating, in subrotund heaps; spores brown.—*D.C. Fl. Fr. vi. p.* 94. *Eng. Fl. v. p.* 372. *Bart. exs. no.* 90.

Seem. Journ. ii. p. 37. *Cooke M.F.* p. 192. *Fckl. exs.* no. 1542. *Berk. exs.* no. 340.

On Bladder Campion (*Silene inflata*.) Rare.

Some of the peridia are short and open, others larger and closed.

1623. *Æcidium orobi.* *D.C.* "Bitter-vetch Cluster Cups."

SPERMOGONES.

PROTOSPORES.—Spots yellow, effused; peridia scattered, and disposed in small heaps; spores orange, at length white.—*D.C. Fl. Fr.* vi. p. 95. *Eng. Fl.* v. p. 374. *Seem. Journ.* ii. p. 38. *Cooke M.F.* p. 192. *Fckl. exs.* no. 267.

On stems and leaves of *Orobis tuberosus*. May.

β. Sub-immersæ.

1624. *Æcidium compositarum.* *Mart.* "Composite Cluster Cups."

SPERMOGONES?

PROTOSPORES. Spots purplish, subrotund, confluent above; peridia crowded, in orbicular patches, or circinating, on the under surface; spores orange, oval.—*Mart. Erl.* p. 314. *Berk. exs.* no. 322. *Eng. Fl.* v. p. 370. *Seem. Journ.* ii. p. 38. *Cooke M.F.* p. 192.

On various *Compositæ*. [United States.]

var. a. Taraxaci. Grev. Clusters small, scattered.—*Æ. Taraxaci.* Grev. *Fl. Ed.* p. 444.

On leaves of the dandelion. June to July.

var. b. Prenanthis. Pers. Spots circular or irregular, purplish; subiculum incrassated.—*Æ. prenanthis.* Pers. *Syn.* p. 208.

On leaves of Hawkweed (*Hieracium paludosum*). Summer.

var. c. Tussilaginis. Pers. Clusters round, on a thickened base; peridia circinating.—*Æ. Tussilaginis.* Pers. *Syn.* 209. *Sow. t.* 397, f. 1. *Moug. exs.* no. 88. *Cooke exs.* no. 12. *Fckl. exs.* no. 270. *Cooke L.F.* no. 58.

On the under surface of leaves of Coltsfoot and Butterbur. Common. Autumn.

var. d. Jacobææ. Grev. Pustular, soon becoming agglomerated, numerous, depressed; peridia splitting into short, brittle, yellowish-white teeth.—*Æ. Jacobææ.* Grev.

On leaves of *Senecio Jacobæa* and *Sonchus arvensis*. June to August.

var. e. Lapsani. Purt. Spots purplish, irregular, confluent, on both sides of the leaves; peridia amphigenous, in irregular patches or scattered, not prominent, teeth numerous, minute, reflexed; spores yellow, oval.—*Æ. lapsani.* Purt. *M.S.S. Seem. Journ.* ii. p. 38, t. 14, f. 2. *Cooke exs. no. 13, Fckl. exs. no. 271.*

On both surfaces of the leaves of *Lapsana communis*. April.

var. f. bellidis. D.C. *Berk. exs. no. 225. Cooke L.F. no. 57. Cooke exs. no. 327.*

On leaves of common Daisy.

1625. *Æcidium saniculæ.* *Carm.* "Sanicle Cluster Cups."

SPERMOGONES?

PROTOSPORES. Spots purplish, slightly incrassated, small, scattered, roundish; peridia in small circinate clusters, hypogenous, and on the petioles, at first hemispherical, at length open, margin with from 4 to 6 spreading lobes; spores yellowish, elliptical.—*Cooke Seem. Journ.* ii. p. 39, t. 14, f. 1. *Cooke M.F. p. 192. Cooke exs. no. 14.*

On leaves and petioles of *Sanicula Europæa*. May. June.

1626. *Æcidium violæ.* *Schum.* "Violet Cluster Cups."

SPERMOGONES?

PROTOSPORES. Spots yellowish; peridia in irregular heaps, seriate and scattered; spores orange, at length brown.—*Grev. Fl. Ed. p. 444. Eng. Fl. v. p. 372. Seem. Journ.* ii. p. 39. *Cooke M.F. p. 193. Cooke exs. no. 104. Fckl. exs. no. 275. Berk. exs. no. 228.*

On leaves, petioles, and sepals of violets. May. June.
Common. [United States.]

1627. *Æcidium geranii.* D.C. "Cranesbill Cluster Cups."

SPERMOGONES?

PROTOSPORES. Spots yellow and purple; peridia in circinating clusters; spores yellow, at length brown.—*D.C. Fl. Fr. vi. p. 93. Eng. Fl. v. p. 371. Seem. Journ.* ii. p. 40. *Cooke M.F. p. 193. Cooke exs. no. 107.*

On the under surface of leaves of *Geranium pratense* and *G. dissectum*. [S. Carolina.]

Æ. amorphæ Cooke Grev 1878 p. 157

1628. Æcidium menthæ. D.C. "Mint Cluster Cups."

SPERMOGONES ?

PROTOSPORES. Spots obliterated; subiculum thickened; peridia scattered, emersed, or aggregate and immersed; spores orange, elliptic.—*D.C. Fl. Fr.* vi. p. 95. *Eng. Fl.* v. p. 370. *Seem. Journ.* ii. p. 40. *Cooke M.F.* p. 193.

On various mints.

1629. Æcidium scrophulariæ. D.C. "Figwort Cluster Cups."

SPERMOGONES ?

PROTOSPORES. Spots yellowish; peridia in roundish circinate clusters (rarely scattered) on the under surface; spores whitish, becoming tawny.—*D.C. Fl. Fr.* vi. p. 91. *Ayres. exs. no.* 21. *Seem. Journ.* ii. p. 40. *Cooke M.F.* p. 193. *Cooke exs. no.* 209.

On the leaves of *Scrophularia aquatica*. June.**1630. Æcidium pedicularis. Lobosch. "Red-rattle Cluster Cups."**

SPERMOGONES ?

PROTOSPORES. Spots obliterated; subiculum thickened; peridia thickly and irregularly clustered, sub-immersed; spores pallid orange.—*Lk. Sp.* ii. p. 47. *Berk. Ann. N.H.* no. 1. *Cooke M.F.* p. 194. *Lob. Act. Soc. Mosc.* v. 76, t. 5, f. 1. *Seem. Journ.* ii. p. 40. *Cooke exs. no.* 105.

On *Pedicularis palustris*. Sept.**1631. Æcidium primulæ. D.C. "Primrose Cluster Cups."**

SPERMOGONES ?

PROTOSPORES. Spots obliterated; peridia solitary, scattered, and crowded, hypogenous; spores whitish-yellow.—*D.C. Fl. Fr.* vi. p. 90. *Eng. Fl.* v. p. 369. *Seem. Journ.* ii. p. 40. *Cooke M.F.* p. 194. *Cooke exs. no.* 296. *Berk. exs. no.* 341.

On the under surface of leaves of primroses. May.

1632. Æcidium rubellum. Pers. "Dock Cluster Cups."

SPERMOGONES ?

PROTOSPORES. Spots purple; peridia circinating; centre free; spores yellowish-white.—*Eng. Fl.* v. p. 369. *Moug. exs. no.* 286. *Sow. t.* 405. *Purt. iii. t.* 26. *Seem. Journ.* ii. p. 40. *Cooke*

M.F. p. 194. *Cooke exs.* no. 15. *Fckl. exs.* no. 1664. *Cooke L.F.* no. 59.

On leaves of dock, rhubarb, and sorrel. May. June.
[United States.]

var. β . **aviculare.** *Kunze.* Without definite spots.

On leaves of *Polygonum aviculare.* Winchester.

We have seen only one specimen of this variety, received from Mr. F. J. Warner, and from that would be disposed to regard it as a distinct species, but have not done so on the faith of a single specimen.

1633. Æcidium ari. *Berk.* Wake-robin Cluster Cups."

SPERMOGONES ?

PROTOSPORES. Spots round, confluent; peridia circinating, not crowded, central ones abortive.—*Eng. Fl.* v. p. 369. *Seem. Journ.* ii. p. 41. *Cooke M.F.* p. 194.

On leaves of *Arum maculatum.* June. July. Rare.
[United States.]

1634. Æcidium allii. *Grev.* "Garlic Cluster Cups."

SPERMOGONES. Preceding the peridia on the same or on different leaves; spermatia minute, white.

PROTOSPORES. Spots pale; peridia circinating, not contiguous; spores yellowish.—*Grev. Fl. Ed.* p. 447. *Eng. Fl.* v. p. 369. *Seem. Journ.* ii. p. 41. *Cooke M.F.* p. 194. *Cooke exs.* no. 16.

On leaves of *Allium ursinum.* June. July.

1635. Æcidium orchidearum. *Fiedl.* "Orchis Cluster Cup."

SPERMOGONES. Sometimes occupying the centre of the tufts.

PROTOSPORES. Spots large, pallid, orbicular or elongated; peridia circinating, semi-immersed; spores golden-yellow.—*Cooke M.F. 2d. ed.* p. 223. *Cooke exs.* no. 106. *Kl. exs.* no. 1690.

On *Orchis latifolia.* June.

Gen. 185. ENDOPHYLLUM, *Lev.*

Peridium enclosed within the substance of the leaf, bursting irregularly.

1636. Endophyllum sempervivi. *Lev.* "Houseleek Endophyllum."

Peridia immersed, elliptic or roundish; spores ochraceous, becoming brownish.—*Uredo sempervivi.* *A. & S. p.* 126. *Berk. Ann. N.H. no.* 476. *Seem. Journ. ii. p.* 41. *Cooke M.F. p.* 194.

On leaves of houseleek. Rare. Warwickshire.

Gen. **186.**

GRAPHIOLA, *Poit.*

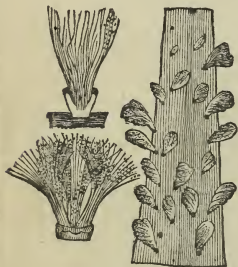


Fig. 221.

Peridium sessile, ovate, double, exterior compact, coriaceous; interior [membranaceous, incised, longer than the exterior, giving rise to fascicles of erect, long, simple threads; spores copious, minute, globose.—*Corda. Anl. p.* 74. (*Fig. 221.*)

1637. Graphiola phœnicis. *Poit.* "Date Palm Graphiola."

Outer peridium hard, blackish; inner peridium membranaceous, fugitive; spores yellow.—*Poiteau. Ann. des Sc. Nat.* 1824, *p.* 473, *t.* 26, *f.* 2. *Ann. N.H. no.* 1049. *Chev. Fl. Par. t.* 2, *f.* 1. *Bail. t.* 18. *Corda. Anl. t. C. f.* 26, *no.* 5-8. *Desm. exs. no.* 436. *Rav. exs. iv. no.* 72.

On palm leaves in conservatories.

[Texas.]

(*Fig. 221.*)

FAMILY IV. HYPHOMYCETES.

Filamentous. Fertile threads naked, for the most part free, especially above, or loosely compacted, simple or branched, bearing the spores at their apices, rarely more closely packed, so as to form a distinct common stem.—*Berk. Outl. p. 337.*

Fertile threads compacted, sometimes cellular			
Stem or stroma compound			
Spores dry, volatile	.	.	<i>Isariacei.</i>
Mass of spores moist, diffluent	.	.	<i>Stilbacei.</i>
Fertile threads free or anastomosing			
Fertile threads dark, carbonized			
Spores mostly compound	.	.	<i>Dematiei.</i>
Fertile threads not carbonized			
Very distinct			
Spores mostly simple	.	.	<i>Mucedines.</i>
Scarcely distinct from mycelium			
Spores profuse	.	.	<i>Sepedoniæ.</i>

Trichodermacei

Order XVIII. ISARIACEI.

Threads more or less compacted, plants assuming hymenomycetous forms.—*Berk. Outl. p. 338.*

Receptacle elongated. Tips free			
Floccose	.	.	<i>Isaria.</i>
Dilated above	.	.	<i>Anthina.</i>
Receptacle branched			
Subgelatinous	.	.	<i>Ceratium.</i>
Receptacle clavate			
Dusted with the spores	.	.	<i>Pachnocybe.</i>

Some of the species formerly included in this order are now known to be conidiiferous states of higher forms. Many others are suspected.

Gen. 187.

ISARIA, Fr.

Receptacle elongated, floccose, without any distinct heads. Tips of threads only free.—*Berk. Outl. p. 338.* (Fig. 222.)



Fig. 222.

1638. Isaria felina. *Fr.* "Cat's Isaria."

Cæspitose, elongated, filiform, branched, white, internally solid, filamentose; sporiferous stratum lax, farinaceous.—*Fr. S.M. iii. p. 271. Chev. Jour. Ph. 1822, t. 1, f. 5. B. & Br. Ann. N.H. no. 1050.*

On cat's dung in cellars. Jan. London.
The specimens found were mixed with *Mucor phycomyces*.

ISARIA FARINOSA. *Fr.* is a condition of *Torrubia militaris*.
Tul. (Fig. 222.)

1639. Isaria arachnophila. *Ditm.* "Spider Isaria."

Sub-cæspitose, clavate, simple, white; generally pubescent or pulverulent, conidia in moniliform threads.—*Fr. S.M. iii. p. 273. Sturm. t. 55. Berk. Ann. N.H. no. 117. Bisch. f. 3769.*

On dead spiders. Colleyweston.

This is not an autonomous species, but the conidia of some *Torrubia*.

1640. Isaria brachiata. *Schum.* "Branched Isaria."

Gregarious, rigid, becoming smooth at the base, very much branched; branches slender, patent, straight, white.—*Fr. S.M. iii. p. 279. Batsch. f. 163. Berk. Mag. Zool. & Bot. no. 30. Fl. Dan. t. 2280, f. 3. Kl. exs. no. 1426. Fckl. exs. no. 169.*

On dead herbaceous stems. March. [Mid. Carolina.]

1641. Isaria citrina. *P.* "Lemon-coloured Isaria."

Gregarious, very much branched, soft, everywhere pilose, lemon-coloured, whitish at the tips.—*Fr. S.M. iii. p. 279. Berk. Mag. Zool. & Bot. no. 31. Pers. Ic. & Des. t. 3, f. 1. Sturm. t. 57. Corda. Anl. t. 9, f. 71, no. 5-7. Bisch. f. 3786. Pay. f. 351.*

On decaying fungi. Aug.—Nov. [Mid. Carolina.]

1642. *Isaria intricata*. Fr. "Intricate Isaria."

Cæspitose, capillary, branched, white; branches few, erect, intricate, villous; apices of the threads monosporous.—*Fr. S.M.* iii. p. 278. *Berk. Ann. N.H.* no. 118.

On decaying fungi. Autumn.

1643. *Isaria Friesii*. Mont. "Fries's Isaria."

Small, fasciculate, erumpent, white, villous, flocci bearing at their tips a minute, oblong, hyaline spore.—*Mont. Ann. Sc. Nat. Ser. ii.-vi.* p. 28, vol. v. t. 12. f. 3. *Berk. Ann. N.H.* no. 491.

On dead twigs.

Sometimes pale grey, sometimes fawn coloured. Not more than a line in length.

1644. *Isaria puberula*. Berk. "Dahlia flower Isaria."

Minute, reddish; stem straight, branches few and simple; apices clavate.—*Berk. Ann. N.H.* no. 221, t. 12, f. 12.

On dead flowers of *Dahlia*.

About 1 line high; stem straight, slender, with generally three short obtuse branchlets given off from the same point, occasionally the stem is forked, but in this case I have not seen the second division branched. The whole plant is of a reddish-gray hue, and is mealy, with little granules and flocci.—*M.J.B.*

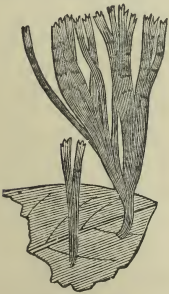
Gen. 188.**ANTHINA, Fr.**

Fig. 223.

Receptacle elongated, vertical, confluent with the stem, dilated above. Tips of threads only free.—*Fr. S.M.* iii. p. 281. *Berk. Outl.* p. 338. (Fig. 223.)

1645. *Anthina flammea*. Fr. "Yellow Anthina."

Attenuated downwards, smooth, blood-red, inclining to saffron-yellow, dilated above, plumose, yellow.—*Fr. S.M.* iii. p. 283. *Eng. Fl.* v. p. 329. *Berk. Ann. N.H.* no. 119. *Berk. Outl.* t. 21, f. 3. *Roth.* t. 3, f. 1. *Jungh. Linn.* 1830, t. 7, f. 4. *Clavaria miniata*, *Purt.* t. 18. *Bisch. f.* 3772. *Fckl. exs.* no. 1659. *Berk. exs.* no. 206.

On fallen beech leaves. Autumn. (Fig. 223.)

Gen. 189.

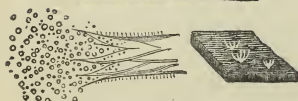
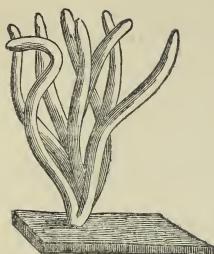
CERATIUM, A. & S.

Fig. 224.

Kl. exs. no. 572. Fckl. exs. no. 170. Fl. Dan. t. 718. f. 2. Jacq. Misc. i. t. 16. Batsch. f. 19. Bull. t. 415, f. 2. A. & S. t. 2. f. 7. Link. Diss. i. t. i. f. 38. Nees. f. 82. Grev. t. 168. Clavaria byssoides, Sow. t. 335.

On rotten wood.

Receptacle branched, cylindrical, membranous, reticulated, sub-gelatinous, clothed with short fertile flocci, one in the centre of each reticulation.—*Fr. S.M. iii. p. 293. Berk. Outl. p. 338. Eng. Fl. v. p. 329.*

(Fig. 224.)

1646. Ceratium hydroides.

A. & S. "Chalky Ceratium."

Aggregated, clavulæ sub-discrete, resembling prickles, at length chalk-white.—*Fr. S.M. iii. p. 294. Mich. t. 92, f. 2. Eng. Fl. v. p. 329. Bisch. f. 3770. Corda. Anl. t. 9, f. 71, no. 1-4.*

(Fig. 224.)

[New England.]

Gen. 190.

PACHNOCYBE, Berk.

Stem solid, filiform below, clavate above, dusted with the minute spores.—*Berk. Outl. p. 339. Eng. Fl. v. p. 333.*

(Fig. 225.)

1647. Pachnocybe subulata. Berk.

"Awl-shaped Pachnocybe."

Stem brown-grey, subulate, slightly incrassated above; spores minute.—*Berk. Eng. Fl. v. p. 333. Sow. t. 386, f. 5. Nees. N.A. Cur. ix. t. 5, f. 8. Sturm. t. 30. Berk. exs. no. 51.*

On wood, sticks, &c. [Low. Carolina.]



Fig. 225.

Stem $\frac{1}{2}$ -2 lines or more high, brownish cinereous, truly subulate, or slightly thickened above, often fasciculate, occasionally breaking up longitudinally into flocci, the upper half clouded with the minute elliptic spores, which gradually fall away when the plant is placed in water.—*Eng. Fl.*

(Fig. 225.)

1648. Pachnocybe grisea. *Berk.* "Grey Pachnocybe."

Densely gregarious, abbreviated; stem blackish; heads globose; spores grey.—*Berk. Eng. Fl.* v. p. 334. *Periconia discolor*, *Corda.* iii. f. 38. *B. & Br. Ann. N.H.* no. 495*.

On dead herbaceous stems.

Stem dark, nearly black, composed of fibres not a line high, head greyish, at length dusky, spores elliptic.—*Eng. Fl.*

1649. Pachnocybe acicula. *Berk.* "Needle-shaped Pachnocybe."

Gregarious; stem white or pallid; head sub-globose; spores elliptic.—*Eng. Fl.* v. p. 334.

On dead herbaceous stems.

Mycelium obsolete. Scarcely a line high, gregarious, but rather scattered, pure white, or with the slightest possible pallid tinge on the stem. Stem splitting up into fibres; receptacle sub-globose, covered with minute elliptic spores.—*Eng. Fl.*

1650. Pachnocybe albida. *Berk.* "Whitish Pachnocybe."

Gregarious, pure white, clavato, spores large, oval (oval-oblong. *Fr.*)—*Eng. Fl.* v. p. 335. *Sporocybe albida*, *Fr. S.M.* iii. p. 14. *Berk. exs.* no. 52.

On rotten wood.

Not a line high. Gregarious, but rather scattered, white; stem marked with cells like the leaves of a *Hypnum*, filiform at the base, confluent with the strongly clavate apex, which is sometimes forked. Spores scattered on the receptacle, large, oval, transparent.—*Eng. Fl.*

Order XIX. STILBACEI.

Receptacle subglobose, often stipitate, clothed with mostly minute, diffuent, sub-gelatinous spores.—*Berk. Outl. p. 339.*

More or less stipitate

Stem firm; head subglobose

Spores minute, involved in gluten . . . *Stilbum.*

Spores fusiform

Straight *Atractium.*

Curved *Microcera.*

Shortly, or scarcely stipitate

Receptacle wart-like

Spores minute, gelatinous *Tubercularia.*

Sessile

Receptacle bristly

Spores gelatinous, diffuent *Volutella.*

Receptacle discoid, immarginate *Fusarium.*

Receptacle at length marginate *Myrothecium.*

Receptacle subglobose, vesicular *Epicoccum.*

Receptacle obscure

Spores pulverulent *Illosporium.*

Spores disposed in threads *Egerita.*

Gen. 191.

STILBUM, Tode.

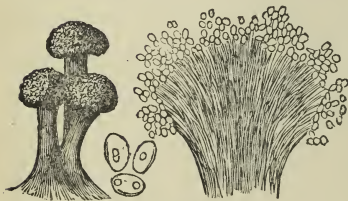


Fig. 226.

Stem firm, elongated; head nearly globose; spores minute, or elongated, involved in gluten. *Berk. Outl. p. 339. Eng. Fl. v. p. 329. (Fig. 226.)*

1651. Stilbum tomentosum. *Schrad.* "Woolly Stilbum."

White, head globose; stems equal, tomentose, connected by a byssoid mycelium.—*Schrad. Journ. 1799, t. 3, f. 1. Fr. S.M. iii. p. 301. Grev. t. 281. Sturm. t. 46. Eng. Fl. v. p. 330. Bisch. f. 3781.*

On different species of *Trichia.*

[Low. Carolina.]

1652. *Stilbum aurantiacum*. Berk. "Orange Stilbum."

Subfasciculate, orange; stem smooth, darker below, head sub-clavate; spores oblong, obtuse, subtruncate.—*Berk. Ann. N.H. no. 223, t. 12, f. 14. Bab. Abstr. Linn. Trans. 1839.*

On dead elm branches. Leicestershire.

Receptacle composed of sub-dichotomous filaments, crowned with abortive spores, which are about one third shorter than those which are perfect.

1653. *Stilbum vaporarium*. B. & Br. "Stove Stilbum."

Stems crowded, fasciculate, more or less connate at the base, cinereous; heads flesh coloured; spores oblong, large.—*Ann. N.H. no. 493.*

On wood in stoves. Kew Gardens.

This species can scarcely be regarded as indigenous; if so it is still too closely allied to *Stilbum fasciculatum*, from which it differs chiefly in the size of the spores.

1654. *Stilbum fasciculatum*. B. & Br. "Fasciculate Stilbum."

Stems flabellato-fasciculate, connate at the base, cinereous; heads flesh coloured; spores elliptic, small.—*Ann. N.H. no. 492-1148**.

On decayed wood. Swansea.

Stems gray, fasciculate, connate at the base, so as to form little flabelliform tufts. Figured by Tulasne (*Carp. iii. t. 14, f. 14-19.*) as a state of his *Sporostilbe gracilipes*, and is therefore not autonomous.

1655. *Stilbum fimetarium*. B. & Br. "Dung Stilbum."

Small, of a pleasant red colour; head at first subconical, then nearly plane, somewhat angular.—*Ann. N.H. no. 494. Helotium fimetarium, Pers. Syn. p. 678. Leotia fimetaria, Pers. Obs. ii. t. 5, f. 4, 5.*

On dung.

[S. Carolina.]

1656. *Stilbum erythrocephalum*. Ditm. "Rosy Stilbum."

Heads globoso-turbinate, rose-coloured; stem rather thick, pilose, whitish.—*Fr. S.M. iii. p. 302. Ditm. Sturm. t. 45. Eng. Fl. v. p. 330. Bisch. f. 3780. Kl. exs. no. 1428.*

On dung. King's Cliffe.

Scattered. Stem equal or attenuated upwards, at first blunt, without any head, and clothed with patent subfasciculate, or suberect down, with a few spreading flocci at the base, at length the apex swells, at first downy all over, but soon smooth, a little rugged, firm; spores elliptic.—*Eng. Fl.*

1657. Stilbum rigidum. *P.* "Rigid Stilbum."

Head subrotund, hyaline, then milk-white or cinereous; stem filiform, very long, black.—*Ust. Ann.* ii. t. 2, f. 2. *Sturm.* t. 59. *Berk. Mag. Zool. & Bot.* no. 32. *Fr. S.M.* iii. p. 302. *Fckl. exs.* no. 177.

On decayed wood.

[Mid. Carolina.]

1658. Stilbum piliforme. *P.* "Hair-like Stilbum."

Head globose, hyaline; stems fasciculate, subulate, rigid, black.—*Fr. S.M.* iii. p. 303. *Nees.* f. 88. *Berk. Mag. Zool. & Bot.* no. 33. *Corda. Anl. t. B.* f. 20, no. 4-6. *Berk. exs.* no. 50.

On decayed wood.

[Mid. Carolina.]

1659. Stilbum bicolor. *P.* "Two-coloured Stilbum."

Head subrotund, whitish; stem subulate, pallid, olive-brown below.—*Fr. S.M.* iii. p. 303. *Eng. Fl.* v. p. 330. *Fl. Dan.* t. 2280, f. 1.

On trunks of trees. Appin.

1660. Stilbum anomalum. *Berk.* "Anomalous Stilbum."

Head subglobose, yellow; stem black, yellow above, generally smooth, sometimes slightly floccose at the base; spores subfusiform.—*Berk. Mag. Zool. & Bot.* no. 34, t. 3, f. 9.

On dead twigs. King's Cliffe.

About half a line high; stem black, yellow above, generally smooth, but sometimes furnished with a few short flocci towards the base; head subglobose, yellow, when placed in water falling away into subfusiform spores, which rest upon a flat disc-like expansion of the upper part of the stem. Consistence not at all gelatinous. Resembling *S. xanthocephalum*, except in the form of the spores.—*M.J.B.*

1661. Stilbum nigrum. *Berk.* "Black Stilbum."

Stem short, dirty white, head ovate or subglobose, granulated; spores subcylindric.—*Eng. Fl.* v. p. 330.

On dead *Eriophorum*.

About $\frac{1}{2}$ line high, stem rather more than half the whole height, head somewhat granulated, compact, and not the least pulverulent when dry, dissolving in water, and giving out a multitude of minute, subcylindric spores, which are spread over the depressed black apex of the stem.—*Eng. Fl.*

1662. *Stilbum pellucidum.* Schrad. "Pellucid Stilbum."

Head subrotund, whitish; stem equal, rigid, hyaline.—*Fr. S.M.* iii. p. 304. *Eng. Fl.* v. p. 330. *Fckl. exs.* no. 176.

On wood and decayed fungi.

1663. *Stilbum turbinatum.* Tode. "Top-shaped Stilbum."

Head globose or turbinate, pellucid, yellowish, as well as the subequal stem.—*Fr. S.M.* iii. p. 304. *Eng. Fl.* v. p. 330. *Tode. t.* 2, f. 2. *Pers. Ic. Pict. t.* 22, f. 1. *Bisch. f.* 3811. *Rabh. F.E.* no. 61.

On soft decayed wood.

[Mid. Carolina.]

Head inversely pear-shaped, white; spores globose. Stem attenuated upwards, pale yellow, at length verdigris-green at the base, probably from the presence of some minute Algæ.—*Eng. Fl.*

1664. *Stilbum vulgare.* Tode. "Common Stilbum."

Gregarious, whitish, head globose; stem subequal, rather thick.—*Fr. S.M.* iii. p. 305. *Eng. Fl.* v. p. 330. *Tode. t.* 2, f. 16. *Sturm. t.* 58. *Kl. exs.* no. 1752. *Schnzl. t.* 12, f. 44, 45. *Corda. i. f.* 272.

On decaying wood, &c.

[Mid. Carolina.]

"Head roundish, nearly white, semi-fluid, at length firmer and yellowish; stem rather thick, cylindrical;" always minute, but variable, the head at length pruinose from the globose white spores. (Fig. 226.)

Gen. 192.

ATRACTIUM, Fr.

Stem firm; head subglobose; spores fusiform, elongated.—*Berk. Outl. p.* 340. (Fig. 227.)

1665. *Atractium flammeum.* B. & Rav. "Flame-red Atractium."

Shortly sub-cylindrical, flame-red, white below, pruinose; spores curved, fusiform, hyaline, with six or more septa, on long sporophores.—*Ann. N.H.* no. 757. *Tul. Carp.* iii. p. 104, t. xiii. f. 12.

On the bark of willows. [S. Carolina.]

Scarcely $\frac{1}{2}$ line high, head convex; spores .003 in. long. The habit is just that of *Stilbum aurantiacum*. According to Tulasne this is the conidiophorous state of *Sphaerostilbe flammea*. (Fig. 227.)



Fig. 227.

Gen. 193.

MICROCERA, Desm.

Fig. 228.

Veil persistent, membranaceo-floccose, then splitting above into laciniae; receptacle clavate, fleshy, composed of nearly simple sporiferous threads; spores fusiform, arcuate.—*Desm. Ann. Sc. Nat.* (1848).x. p. 359. (*Fig.* 228.)

1666. Microcera coccophila. *Desm.* "Coccus Microcera."

Very minute, subcaespitose, conical, simple, rose-red, membrane of the base very thin, whitish, vaginate, connate; spores hyaline, elongated, acute at either end.—*Desm. Ann. Sc. Nat.* 1848, x. p. 359. *Exs. no.* 1750. *Rabh. exs. no.* 269. *Cooke exs. no.* 350. *Tul. F. Carp.* iii. p. 105.

Parasitic on *Cocci* on bark of trees.

Tulasne considers this to be the conidiophorous form of a species of *Nectria*. (*Fig.* 228.)

Gen. 194.

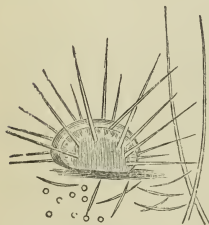
VOLUTELLA, Fr.

Fig. 229.

Receptacle fringed, or studded with long hyaline bristles; spores diffuent, gelatinous.—*Fr. S.M.* iii. p. 466. *Berk. Outl.* p. 340. (*Fig.* 229.)

1667. Volutella ciliata. *Fr.*
"Fringed Volutella."

Substipitate, whitish, then rose coloured, circumference ciliated with erect bristles.—*Fr. S.M.* iii. p. 467. *Bisch. f.* 3827. *Psilonia rosea*, *Eng. Fl.*

v. p. 353. *Berk. exs. no.* 56. *Ann. N.H.* no. 495.

On potatoes. Winter and spring. [Mid. Carolina.]

Spores elliptic or oblong, larger and slightly curved; bristles sharp-pointed, septate. There is a sort of stroma, probably formed from abortive bristles.
—*M. J. B.*

1668. Volutella setosa. Berk. "Bristly Volutella."

Quite sessile, white, mass of spores surrounded by and mixed with erect elongated bristles.—Berk. Outl. p. 340. *Psilonia setosa*, Eng. Fl. v. p. 353. *Ægerita setosa*, Grev. t. 268, f. 2. Fr. S.M. iii. p. 220.

On wood, herbaceous stems, &c. Appin.

Spores globose and fusiform. The bristles spring from the base and penetrate the whole mass. (Fig. 229.)

1669. Volutella hyacinthorum. Berk. "Hyacinth Volutella."

Very minute, white, very shortly but distinctly stipitate, mass of spores surrounded by bristles.—Berk. Out. p. 340. *Psilonia hyacinthorum*, Eng. Fl. v. p. 353.

On dead bulbs. King's Cliffe.

VOLUTELLA BUXI. Berk. Outl. is a state of *Nectria Rous-seliana*.

1670. Volutella melaloma. B. & Br. "Orange Volutella."

Stroma orange, hairs black; spores shortly fusiform, slightly lunate, appendiculate.—B. & Br. Ann. N.H. no. 496, t. xi. f. 3.

On Carices.

Perfectly superficial. Stroma and spores bright orange, fringed with black articulated hairs. In company with *Neottiospora caricum*.

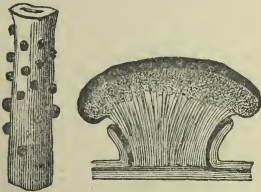
Gen. 195. TUBERCULARIA, Tode.

Fig. 230.

Receptacle verrucæform, innate, clothed with a dense stratum of gelatinous, minute spores.—Berk. Outl. p. 340.

Probably none of the species are autonomous. (Fig. 230.)

1671. Tubercularia granulata. P. "Granulate Tubercularia."

Stratum of spores, rugose, dirty-red, at length brown, margin naked; spores subfusiform.—Fr. S.M. iii. p. 465. Grev. t. 187.

Fries. exs. no. 257. Eng. Fl. v. p. 354. Bon. t. ii. f. 222. Bisch. f. 3831. Kl. exs. 99, 1392.

On dead branches.

[United States.]

(Fig. 230 nat. size and magnified section.)

1672. *Tubercularia nigricans.* Lk. "Blackish Tubercularia."

Stratum of spores, even, red, at length black, margin naked.—*Fr. S.M. iii. p. 465, Bull. t. 455, f. 1. Eng. Fl. v. p. 354.*

On trunks.

[Mid. Carolina.]

It is very doubtful whether this and the preceding are any more than aberrant forms of *Tubercularia vulgaris*, and therefore only conidia of *Nectria*. See *Tulasne Carp. iii. p. 79.*

1673. *Tubercularia persicina.* Ditm. "Parasitic Tubercularia."

Sub-innate, white; stratum of spores even, convex, lilac.—*Fr. S.M. iii. p. 466. Sturm. iii. t. 49. Bisch. f. 3833. Kl. exs. no. 1163. Fckl. exs. no. 1642.*

On pustules of *Æcidia*.

[Low. Carolina.]

TUBERCULARIA VULGARIS. *Tode, Eng. Fl. v. p. 354* is only the conidiiferous condition of *Nectria cinnabarina*.

Gen. 196.

FUSARIUM, Link.



Fig. 231.

Receptacle discoid, innato-erumpent, immarginate, clothed with diffuent subgelatinous spores.—*Berk. Outl. p. 341.*

The majority of species included under this genus are probably conditions of higher forms. (Fig. 231.)

1674. *Fusarium lateritium.* Nees. "Brick-red Fusarium."

Hemispherical or irregular, soft, yellowish-red, stroma somewhat thickened, spores curved.—*Fr. S.M. iii. p. 470. Nees. f. 26. Berk. Ann. N.H. no. 249. Ann. Sc. Nat. 1837, viii. t. 2, f. 7. Bisch. f. 3837. Fckl. exs. no. 210. Berk. exs. no. 262.*

On dead twigs (willow, lime, &c.). [Low. Carolina.]

1675. *Fusarium heteronema*. B. & Br. "Pear Fusarium."

Flocci septate below, joints broad, inarticulate above, branched, often forked, slender; spores oblong, curved, uniseptate.—*Ann. N.H. no. 1051, t. xiv. f. 9.*

On decaying pears. Oct. Batheaston.

Resembling somewhat *Septosporium curvatum*, Casp. but not really closely allied. This species is often accompanied by the common orange *Fusarium*, which is known at once by its very different spores.—*B. & Br.*

(*Fig. 231.*)

1676. *Fusarium heterosporium*. N. "Rye Fusarium."

Effused, red, stroma of conidia expanded, perfect spores curved.—*Fr. S.M. iii. p. 472. Nees. N.A. Cur. ix. p. 135. Ann. N.H. no. 955. Fckl. exs. no. 1068. Bisch. f. 3898. Pringsh. Jahrb. ii. t. 29, f. 20. Kl. exs. ii. no. 187.*

On glumes and seeds of Rye. Near Arundel.

Most probably the stylospores of *Claviceps purpurea*, Tul.

FUSARIUM ROSEUM. *Link.* See *Nectria pulicaris*, of which Tulasne states it is the conidia.

FUSARIUM TREMELLOIDES. *Grev.* is doubtless only a stylosporous condition of *Peziza fusarioides*..

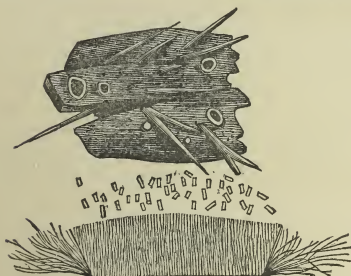
Gen. 197. *MYROTHECIUM*, Tode.

Fig. 232.

Receptacle at length marginate; spores diffluent, oblong, forming a flat or slightly convex dark-green stratum.—*Berk. Outl. p. 341.*

(*Fig. 232.*)

1677. *Myrothecium roridum*. Tode. "Dewy Myrothecium."

Disc turgid; spores cylindrical.—*Fr. S.M. iii. p. 217. Tode. t. 5, f. 38. Grev. t. 140. Eng. Fl. v. p. 323. Bisch. f. 3685. Fckl. exs. no. 166.*

On decaying plants. [Low. Carolina.] (*Fig. 232.*)

Gen. 198.

EPICOCCUM, Link.

Fig. 233.

Receptacle subglobose, vesicular, studded with large, somewhat stipitate spores.—*Berk. Outl. p. 341.*

(*Fig. 233.*)

1678. Epicoccum neglectum. *Desm.*
"Little Epicoccum."

Very minute, gregarious; spots none; stroma subglobose, purplish brown; spores numerous, spherical, reticulated, brown, areolæ darker, pedicel very short, conico-truncate, hyaline.—*B. & Br. Ann. N.H. no. 500. Desm. exs. no. 540. Desm. Ann. Sc. Nat. (1842). xvii. p. 95.*

On decaying plants.

[Low. Carolina.]

Spores ($\cdot 0005$ in.) $\cdot 0125$ m.m. long.

(*Fig. 233.*)

1679. Epicoccum equiseti. *Berk.* "Horse-tail Epicoccum."

Linear, occupying the striæ of the stem; spores globose, minute, atro-sanguineous, smooth.—*Berk. Out. p. 341. Uredo equiseti, Eng. Fl. v. p. 384. Fckl. exs. no. 237.*

On *Equisetum limosum*. Fineshade, Norths.

Gen. 199.

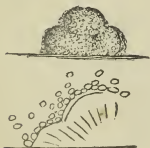
ILLOSPORIUM, Mont.

Fig. 234.

Receptacle obscure; spores irregular, falling away like meal.—*Berk. Outl. p. 341.*
(*Fig. 234.*)

1680. Illosporium roseum. *Fr.* "Rosy Illosporium."

Heaped up in an irregular tubercle, soft, breaking to pieces, rose-coloured.—*Fr. S.M. iii. p. 258. Eng. Fl. v. p. 328. Grev. t. 51. Fl. Dan. t. 1243. Fckl. exs. no. 241, f. 1. Schnzl. t. 14, f. 1-3. Willk. f. 40 c. Rabh. F.E. no. 72.*

On the larger tree lichens, *Parmelia saxatilis*, &c. (*Fig. 234.*)

1681. *Illosporium carneum.* Fr. "Flesh-coloured *Illosporium*."

Gregarious, globular, free, soft, sub-pulverulent, fleshy-red.—*Fr. S.M.* iii. p. 259. *Berk. Ann. N.H.* no. 497. *Berk. exs.* no. 293. *Rabh. F.E.* no. 73.

On *Peltidea canina*. Apethorpe.

1682. *Illosporium corallinum.* Roberge. "Coralline *Illosporium*."

Gregarious, minute, rosy, globose, then cylindrical, somewhat branched, coralline; spores conglomerate, polymorphous, sub-hyaline.—*Desm. Ann. Sc. Nat.* (1848), x. p. 342. *B. & Br. Ann. N.H.* no. 498. *Desm. exs.* no. 1551. *I. coccineum*, Corda.

On *Borreria tenella*. Autumn and Winter.

1683. *Illosporium coccineum.* Fr. "Carmine *Illosporium*."

Crowded, minute, spherical, persistent, carmine red.—*Fr. S.M.* iii. p. 259. *B. & Br. Ann. N.H.* no. 499. *Fckl. exs.* no. 240.

On *Pertusaria communis*. [Low. Carolina.]

Gen. **200. *ÆGERITA*, P.**



Fig. 235.

Receptacle obscure; spores irregular, disposed in short moniliform threads at the apices of flexuous, branched, radiating, compacted peduncles.—*Berk. Outl.* p. 342. (Fig. 235.)

1684. *Ægerita candida.* P. "White *Ægerita*."

Smooth, soon mealy, white; spores ovate-oblong.—*Fr. S.M.* iii. p. 220. *Eng. Fl.* v. p. 324. *Fckl. exs.* no. 163. *Grev. t.* 268, f. 1. *Bisch. f.* 3683. *Hoff. F.G.* ii. t. 9, f. 1. *B. & Br. Ann. N.H.* no. 823, t. 9, f. 7.

On damp decaying wood. [Low. & Mid. Carolina.]

Crowded, granule-like, globose, or hemispherical, of the size of a poppy seed, white, at first even, smooth, then minutely squamulose or mealy from the breaking up of the spores. "There is certainly no peridium, and the genus is typical of a compact *Oidium*." Spores (0006-0005 in.) 015-0125 m.m. long. (Fig. 235.)

Order XX. DEMATIEI.

Threads free, rarely collected into stem-like bundles, more or less corticated, and carbonized, as are frequently the simple or septate spores.—*Berk. Outl.* p. 342.

In the more typical species there is a distinct membrane, which shells off, and where this does not exist the threads are dark and dingy, but never white, or of pure tints.—*M. J. B.*

Flocci united in a common stem.

Spores septate, dark, radiating . . . *Arthrobotryum.*

Spores simple, in a globose head . . . *Periconia.*

Flocci free, simple.

With a vesicular head.

Spores simple, radiating . . . *Ædocephalum.*

Even, straight.

Spores 1-2 apical, subglobose . . . *Monotospora.*

Spores simple, moniliform, basal . . . *Sporodum.*

Torulose.

Spores solitary, multicellular . . . *Mystrosporium.*

Thickened at the joints.

Spores fusiform . . . *Arthrinium.*

Spores biconical, angular . . . *Gonatosporium.*

Thickened at the apex.

Spores curved, apical, in clusters . . . *Camptoum.*

Moniliform.

Spores didymous . . . *Polythrincium.*

Flexuous.

Spores on sporangiform bodies . . . *Ædemium.*

Obscure or delicate.

Spores basal, multicellular . . . *Macrosporium.*

Flocci free, simple, or branched.

Spores concatenate, septate . . . *Dendryphium.*

Spores concatenate, simple . . . *Haplographium.*

Spores in a globose head . . . *Sporocybe.*

Spores septate, apical . . . *Acrothecium.*

Spores multiseptate, scattered . . . *Helminthosporium.*

Spores pedicellate . . . *Septosporium.*

Spores triradiate . . . *Triposporium.*

Spores flat, spiral . . . *Helicoma.*

Spores clavate, at first spiral . . . *Helicocoryne.*

Flocci branched, flexuous.

Spores uniseptate . . . *Cladosporium.*

Flocci branched, upper joints inflated

Spores septate . . . *Cladotrichum.*

Flocci with short, verticillate branches.

Spores single . . . *Stachybotrys.*

Flocci branched, tufted.

Spores globose, clustered . . . *Cephalotrichum.*

Gen. 201.

ARTHROBOTRYUM, Cesati.

Fig. 236.

Minute, stem short, composed of simple, articulated threads, which are swollen above, and terminate in subelliptic, very obtuse, unequally articulated spores, which are dark in the centre and hyaline at the extremities, (.001-.0015 in.) long, exclusive of the swollen base.—*B. & Br.* (Fig. 236.)

1686. Arthrobotryum stilboideum. *Ces.* "Dense-headed Arthrobotryum."

Stem elongated; spores cylindrical, obtuse, three times as long as broad, triseptate.—*Cesati. Hedw. t. 4, f. 1. B. & Br. Ann. N.H. no. 943. A. Broomii. Rabh. exs. no. 65.*

On pollard willows. April.

Spores .0005 in. long, forming a dense *Stilbum*-like head.

[A similar, if not identical, species has been found once on a piece of straw from Norfolk, but the spores were only bi-nucleate, *not* septate, perhaps immature.]

Gen. 202.

DENDRYPHIUM, Corda.

Fig. 237.

Threads free, jointed, simple below, branched above; branches and branchlets often moniloid; spores septate, acrogenous, concatenated.—*Berk. Outl. p. 342.*

The spores in this genus sometimes form moniliform threads, and sometimes exhibit the more usual mode of growth in *Septonema*. (Fig. 237.)

1687. Dendryphium comosum. *Wallr.* "Woolly Dendryphium."

Tufts indeterminate, black; stem simple, brown, moniliform above; spore-bearing threads radiating, simple, or branched, or

forming a rather dense head; spores polymorphous, elongated, septate, yellow-brown; articulations sub-quadrate, contents granular.—*Wallr. Fl. Cr.* ii. p. 300. *Corda.* i. f. 279. *Rabh. F.E.* no. 82. *B. & Br. Ann. N.H.* no. 820. *Fckl. exs.* no. 1523.

On dead nettle stems.

The base of the stem is sometimes sheathed, as in the genus *Sporochisma*.

1688. *Dendryphium curtum.* *B. & Br.* "Short Dendryphium."

Thinly effused; flocci erect, divided above into short, forked ramuli; spores curved, 3-7 septate, articulations constricted.—*Ann. N.H.* no. 538, t. 6, f. 9. *Cooke exs.* no. 357.

On dead stems of nettles. Dundee, &c.

Black, forming very thin, effused patches. Fertile flocci springing from creeping filaments, erect, straight, septate, divided above into a few short furcate or trifid ramuli, which are surmounted by curved 3-7 septate spores, whose articulations are strongly constricted. A small but neat species, remarkable for the short-forked ramuli. The tips of these are often greatly constricted at the articulations when the spores begin to grow.—*B. & Br.* (*Fig.* 237.)

1689. *Dendryphium laxum.* *B. & Br.* "Loose-branched Dendryphium."

Stems short, loosely branched above; spores elongated, subflexuose 7-11 septate.—*Ann. N.H.* no. 539, t. 6, f. 10.

On dead stems of *Inula viscosa*. King's Cliffe.

Patches effused, black; flocci short, erect, articulated, sending off loose branches, which either spring at once from them, or are replaced by a few swollen joints; spores linear, curved, or somewhat flexuose, multiseptate, springing often from the forked tips; articulations slightly constricted; endochrome frequently containing a nucleus.—*B. & Br.*

1690. *Dendryphium ramosum.* *Cooke.* "Branched Dendryphium."

Patches effused, black; flocci erect, articulated, branched above; branches furcate, elongated, lax; spores straight, cylindrical, 3-5 septate.—*Cooke exs.* no. 294.

On herbaceous stems. July. Ashmanhaugh, Norfolk.

The branches are not radiating as in *D. comosum*, septate, but not moniliform, lax, but more capitate than *D. laxum*. Branches three or four times as long as in *D. curtum*.

1691. *Dendryphium griseum.* *B. & Br.* "Grey Dendryphium."

Grey; flocci sparingly branched; spores cylindrical, concatenate, at length uniseptate, hyaline.—*Ann. N.H.* no. 540, t. 6, f. 11. *Rabh. F.E.* no. 83.

On dead nettle stems. March.

Bluish-gray, forming little patches; flocci sparingly branched almost from the base, as far as we have seen inarticulate; spores cylindrical, apiculate at either end, elongated, arranged in dichotomous chains, at length divided by a central septum. This is not like the other species, dark and opaque. The line of demarcation between the chains of spores and threads is strongly marked.—*B. & Br.*

1692. *Dendryphium fumosum.* Berk. "Elegant Dendryphium."

Tufts black, or dingy, more or less effused; flocci erect, short, paler above; spores large, clavate or elongated, endochrome transversely multiseptate, brown.—*Cooke Quekett Journ.* ii. (1870), t. 5. *Dactylium fumosum*, *Corda Mucedinees*, t. xxii. *Helminth. fumosum*, *Curr. Micr. Jour.* v. p. 116, t. 8, f. 6.

On dead *Umbellifers*.

The flocci are stiff and erect, and when ripe of a very dark brown, or almost black colour, being so opaque that it is a matter of difficulty to make out that they are septate. At the apices of the flocci there originate several rows of almost colourless cells, arranged in a moniliform manner, and spreading in different directions. The spores are attached in rows at the extremities of the chains of colourless cells, and are of a rich brown, usually somewhat narrowed at each end, and divided by several transverse lines, which have the appearance of septa.—*Curr.*

Gen. 203.

PERICONIA, Corda.

Stem composed of fasciculate, compacted threads; head globose; spores fixed to the free apices of the threads. *Berk. Outl.* p. 343. (*Fig.* 238.)

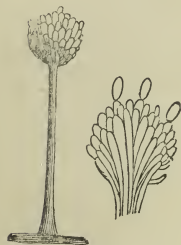


Fig. 238.

1693. *Periconia glaucocephala.* Corda
"Glaucous-headed Periconia."

Tufts delicate, farinose, glaucescent; stem short, slender, smooth, black-brown, opaque, pulvinate above; head spherical, large, glaucous; spores ovate, nucleate.—*Ann. N.H.* no. 495. *Corda. Ic.* iii. f. 37.

On rotten linen. King's Cliffe.

The threads of which the stem is composed are swollen at the apex into a pulvinate capitulum, about which the spores form a spherical head.

(*Fig.* 238.)

1694. *Periconia calicioides.* Berk. "Small-headed Periconia."

Black, mycelium effused, spot-like; head globose, compact; stem slender, subulate.—*Berk. Outl.* p. 343. *Sporocybe*

calicioides, *Fr. S.M.* iii. p. 342. *Eng. Fl.* v. p. 333. *Vet. Ac.* 1816, t. 5, f. 6.

On dead herbaceous stems.

Head small, soon falling off.

Gen. 204.

ŒDOCEPHALUM, Preuss.



Fig. 239.

Hyphasma creeping, septate, stem erect, septate, simple, ending in a vesicular head which bears the spores; spores simple, subradiating.—*Preuss in Sturm.* vi. p. 121. (*Fig.* 239.)

1695. Œdocephalum læticolor. *B. & Br.*
“Bright-coloured Œdocephalum.”

Very minute, brick red, stem equal, pallid; head subglobose; spores globose, granulated, appendiculate.—*Ann. N.H.* no. 1056, t. 14, f. 12.

On sheep's dung. Oct. Batheaston.

Not half a line high, sending out at the base a few threads into the matrix; before the head is formed nearly cylindrical, with some large oil globules, which at length, in great manner, vanish; spores '0006-'0008 in. diameter, with a little appendage at the base like those of *Epicoccum*.—*B. & Br.* (*Fig.* 239.)

Gen. 205.

SPOROCYBE, Fries.

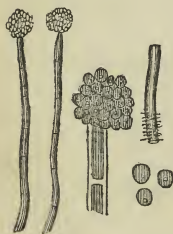


Fig. 240.

Flocci septate, free; heads globose, studded with spores.—*Berk. Outl.* p. 343. (*Fig.* 240.)

1696. Sporocybe byssoides. *Fr.*
“Velvety Sporocybe.”

Black; head globose, compact; spores globose; stem subulate, pellucid at the apex.—*Fr. S.M.* iii. p. 343. *Eng. Fl.* v. p. 333. *Nees. N.A. Cur.* ix. t. 5, f. 9. *Bon.* t. 10, f. 217. *Rabh. F.E.* no. 64. *Cooke exs.* no. 278.

On dead herbaceous stems. Winter. [United States.]

Forming a thin, black, velvety stratum, easily recognised under a lens by the globose heads with which the hairs of the pile are terminated. Scarcely $\frac{1}{2}$ a line high; stem stiff, brown, obscurely annulated; spores large, globose, pellucid, brown, minutely echinulate. The apex of the stem is generally a little incrassated, forming a receptacle for the sporidia.—*M. J. B.*

1697. Sporocybe nigrella. Berk. "Black Sporocybe."

Very minute, black; stem simple, very slender, articulated; spores globose, smooth.—*Berk. Ann. N.H. no. 226, t. 13, f. 16.*

On dead leaves of grass. King's Cliffe, &c.

Extremely minute, not one-fourth of a line high, dark black; stem slender with 4-5 articulations; heads globose; spores globose, smooth, with a globose nucleus. The whole plant is dark, so that it requires a good light to see the articulations of the stem, which are, however, very evident.—*M. J. B.* (Fig. 240.)

1698. Sporocybe alternata. Berk. "Alternate Sporocybe."

Grey-black, forming little orbicular patches; extremely minute; mycelium thin, decumbent; fertile flocci articulate, erect, or subdecumbent, branched alternately in a zigzag manner; each branch terminated by a slightly swollen receptacle, which is studded with oblong subtruncate spores.—*Ann. N.H. no. 227. Aspergillus alternatus. Berk. Ann. N.H. no. 126, t. 8, f. 11.*

On damp paper.

[Mid. Carolina.]

The mode of branching is, as it were, annotinous, the same as that of *Ascotricha chartarum*.

Gen. 206.**STACHYBOTRYS, Corda.**

Fig. 241.

Flocci septate, free; branches bearing short, verticillate ramuli at their apices, forming a little head, and each terminated by a spore.—*Berk. Outl. p. 343. (Fig. 241.)*

1699. Stachybotrys atra. Corda.
"Black Stachybotrys."

Tufts delicate, black; stem dichotomous, sparsely septate, olive-yellow, branches colourless at the apex; spores brown, ovate, or elliptic, with a thick, transverse septum.—*B. & Br. Ann. N.H. no. 817. Corda. i. f. 278. Pay. f. 333.*

On damp millboard.

The spores are not in any stage echinulate, nor are they so broad as in *S. lobulata*. (Fig. 241.)

1700. Stachybotrys lobulata. Berk. "Lobed Stachybotrys."

Black, threads branching proliferously; ramuli subalternate, attenuated; apices 4-5 lobed; spores elliptic, echinulate, or

smooth, binucleate.—*Berk. Outl. p. 343. Sporocybe lobulata. Berk. Ann. N.H. no. 228, t. 13, f. 17. Rabh. F.E. no. 171.*

On damp linen.

From the articulated creeping mycelium spring slender very minutely scabrous threads, branched proliferously; ramuli often alternate, attenuated, their apices swelling into a pyriform 4-5 lobed receptacle, from which spring elliptic spores, some of which are echinulate, others smooth, with two nuclei. The lobes are not mamillate as in *S. atra*, and the spores have no true septum.—*M. J. B.*

Gen. 207.

HAPLOGRAPHIUM, B. & Br.



Fig. 242.

Flocci septate, free, black; spores concenate, hyaline.—*B. & Br. Ann. N.H. no. 818. Berk. Outl. p. 343.*

Distinguished from *Graphium* by its stem, consisting of a single thread, and from *Penicillium* by this being carbonized. .
(*Fig. 242.*)

1701. Haplographium delicatum. B. & Br. "Delicate Haplographium."

Heads small, somewhat olivaceous; spores oblong.—*B. & Br. Ann. N.H. n. 818, t. 9, f. 4.*

On dead stumps. Batheaston.

Forming a subolivaceous stratum; flocci black, mostly simple, but occasionally slightly divided; heads small, composed of sub-dichotomous threads, consisting of oblong sublinear spores, about '0002 in. long. The flocci, when squeezed, often split longitudinally, though they are not in the slightest degree compound.—*B. & Br.*
(*Fig. 242.*)

Gen. 208.

MONOTOSPORA, Corda.



Fig. 243.

Flocci septate, free, black, bearing one or rarely two (by division) large black subglobose spores at their apex.—*Berk. Outl. p. 344.*
(*Fig. 243.*)

1702. Monotospora megalospora. B. & Br.
"Large-spored Monotospora."

Flocci straight, simple; spores obovate, large, even.—*B. & Br. Ann. N.H. no. 759, t. 15, f. 11, and no. 943*.*

On bark of yew. King's Cliffe.

Jet black; flocci erect, straight, nearly equal, simple, articulated; spores terminal, obovate, even, ('0014-'0013 in.) '035 m.m. long.—"A form has occurred on an old stump with broadly fusiform spores, '0012 in. in diameter."—*B. & Br.*
(*Fig. 243.*)

1703. Monotospora sphærocephala. *B. & Br.* "Round-headed Monotospora."

Stratum effused, dense black; flocci simple; spores globose, even.—*B. & Br. Ann. N.H. no. 819, t. 9, f. 5.*

On dead stumps. Dec. Batheaston.

Forming a dense black stratum; flocci black, moderately thick, with two or three septa; spores globose, terminal, even, .001 in. diameter; sometimes seated on a swollen base. This differs from *M. megalospora* in that the spores are globose, not obovate, and smaller.—*B. & Br.*

Gen. **209. CEPHALOTRICHUM, Link.**



Fig. 244.

Flocci free, septate, branched at the apex, and forming there a little globose tuft of hairs, on which are seated the spherical spores.—*Berk. Outl. p. 344. (Fig. 244.)*

1704. Cephalotrichum curtum.
Berk. "Short Cephalotrichum."

Scattered; heads subglobose, bronze-brown; stem short, 1-2 septate, brown; terminal flocci branched, slightly scabrous; spores globose.—*Berk. Ann. N.H. no. 222, t. 12, f. 13.*

On leaves of *Carices*. Collyweston.

Extremely minute; stem short, brown, even, with 1-2 septa, very slightly thickened at the base; heads globose, or sometimes broadly ovate, bronzy brown; threads springing in a little tuft from the top of the stem, forked or ternate, with one or two short acute branchlets, slightly scabrous; spores globose, with a small globose nucleus, smooth.—*M.J.B. (Fig. 244.)*

Gen. **210. ŒDEMIUM, Fr.**

Flocci free, dark, flexuous; spores seated on sporangiform bodies towards the base.—*Berk. Outl. p. 344. (Fig. 245.)*

705. Œdemium atrum. *Fr.* "Black Œdemium."

Flocci erect, densely aggregated, simple or subramose, black, opaque; sporangiform bodies black, subglobose; spores minute, subglobose, scabrous, hyaline.—*Corda. Sturm. vi. t. 9. B. & Br. Ann. N.H. no. 501. Bisch. f. 3816.*



Fig. 245.

On fallen branches.

[Low. Carolina.]

The structure of this plant is at present very imperfectly ascertained. The flocci are of a vinous-brown, and here and there invested with mucilage. The larger sporangiform bodies which adhere to them seem very much to resemble an *Epicoccum*, with its globose, or somewhat obovate scabrous spores.—*M.J.B.*

(Fig. 245.)

Gen. 211.

HELMINTHOSPORIUM, Link.



Fig. 246.

Flocci irregular, simple, or slightly branched, bearing here and there multi-septate spores.—*Berk. Outl. p. 344. Eng. Fl. v. p. 336.*

Tulasne does not consider this a true genus, but made up of forms, which are conditions of different species of *Sphaeria*. New facts are continually strengthening this opinion, but at present only a few species have been satisfactorily traced; hence we have retained all, provisionally.

(Fig. 246.)

1706. Helminthosporium Smithii. *B. & Br.* "Smith's Helminthosporium."

Tufts spongy; threads simple, flexuous; spores very long; endochromes nearly equal to the diameter; common episporium thick.—*B. & Br. Ann. N.H. no. 507, t. 5, f. 5. Rabh. exs. 271. Cooke exs. no. 361. Quekett Journ. ii. (1870), t. 7. Curr. Micr. Journ. v. p. 115, t. 8, f. 1-5.*

On dead holly twigs, &c. Common.

Tufts effused when growing on the wood, linear, and often forming somewhat reticulate, erumpent patches when produced on the bark, rather spongy, coarsely velvety; threads simple, flexuous, articulated; articulations irregular, several times as long as broad; spores terminal, extremely long, linear, multi-articulated, sometimes bent or flexuous; general episporium double, the outer coat thin, the inner extremely thick; endochromes united, about as long as broad, sometimes moniliform, or very irregular, here and there surrounded by a broad cavity, which appears granular under the microscope.—*B. & Br.*

1707. Helminthosporium folliculatum. *Corda.* "Pod-spored Helminthosporium."

Tufts thin, indeterminate, tomentose; flocci lax, branched, brown, slender; spores very long, folliculate, rather thick,

brown, semi-pellucid, endochrome divided into quadrate nucleate cells.—*Corda. i. t. 3, f. 180. Berk. Ann. N.H. no. 231.*

On dead wood, stems of umbelliferous plants, and cabbage stalks. King's Cliffe.

1708. Helminthosporium macrocarpum. Grev. "Large-spored Helminthosporium."

Flocci aggregate, lax, subulate, simple, black; spores large, clavato-fusiform, pellucid, 6-8 septate.—*Grev. t. 148. Eng. Fl. v. p. 336. Fr. S.M. iii. p. 356. Sphaeria ciliaris. Sow. t. 339. Fckl. exs. no. 1627.*

On rotten sticks.

[United States.]

Easily distinguished by the large, clavate, multiseptate spores.

1709. Helminthosporium subulatum. Nees. "Awl-shaped Helminthosporium."

Flocci aggregate, subulate, nearly simple, straight, black; spores large, clavate, incurved, 3-4 septate.—*Nees. Nov. Act. ix. f. 13. Eng. Fl. v. p. 336. Corda. Sturm. t. 14. Fr. S.M. iii. p. 357. Bisch. 3712.*

On oak branches. Appin.

Flocci far more slender than in *H. macrocarpum*, so that the habit is different.

1710. Helminthosporium velutinum. Lk. "Velvety Helminthosporium."

Flocci densely aggregate, somewhat branched, obtuse, black; spores large, obovato-clavate, 3-4 septate.—*Link. Sp. i. p. 47. Nees. f. 65 B. Grev. t. 148, f. 2. Eng. Fl. v. p. 336. Fr. S.M. iii. p. 359. Bisch. f. 3719. Schnzl. t. 12, f. 30-33. Rabh. F.E. no. 78. Fckl. exs. no. 106. Cooke exs. no. 358.*

On rotten sticks.

1711. Helminthosporium fusicolorum. Berk. "Spindle-spored Helminthosporium."

Flocci densely aggregate, slightly branched, obtuse, black; spores fusiform, narrower than the flocci, 6-7 septate.—*Eng. Fl. v. p. 336.*

On rotten sticks. Beeston, Notts.

1712. Helminthosporium nanum. *Nees.* "Dwarf Helminthosporium."

Flocci scattered, simple or forked, obtuse, knotty, their apices forming large, sub-cylindric, 3-4 septate spores, slightly shorter than the flocci.—*Nees. Nov. Act.* ix. f. 13. *Fr. S.M.* iii. p. 359. *Eng. Fl.* v. p. 336. *Bisch. f.* 3717.

On herbaceous stems. Winter.

Sporidia of a dark pellucid brown.

1713. Helminthosporium simplex. *Kze.* "Simple Helminthosporium."

Flocci aggregate, simple, or slightly branched, obtuse, black; spores fusiform, acute, pellucid, septa evanescent.—*Nees. V.A. Cur.* ix. f. 11. *Corda, Fr. S.M.* iii. p. 359. *Eng. Fl.* v. p. 337. *Bisch. f.* 3715.

On rotten branches.

Forming a thin, dirty, uniform stratum like that of some *Torula*; septa 2-3.

1714. Helminthosporium tiliaë. *Fr.* "Lime Helminthosporium."

Flocci simple, obtuse, obscurely annulated, brown-black, fasciculate, on a convex erumpent stroma, the greater part changed into spores.—*Fr. S.M.* iii. p. 360. *Eng. Fl.* v. p. 337. *Bisch. f.* 3787. *Ann. N.H.* 230, t. 13, f. 18. *Exosporium Tiliaë*, *Grev. t.* 208. *Sphæria echinata*, *Sow. Herb.*

On lime branches. Common.

1715. Helminthosporium Rousselianum. *Mont.* "Roussel's Helminthosporium."

Flocci simple, congregated, sooty black, bulbous at the base, apex pellucid, oblong, incrassated, and nodulose, remotely septate; spores fusiform, hyaline, 3-5 septate.—*Mont. Ann. Sc. Nat.* iii. Nov. 1849, p. 300. *B. & Br. Ann. N.H.* no. 508*.

On beech, with *Sporochisma mirabile*, *B.* of which it is a secondary form of fruit.

1716. Helminthosporium turbinatum. *B. & Br.* "Top-shaped Helminthosporium."

Flocci slender, simple; spores elongato-turbinate, truncately apiculate, 4-7 articulate, opaque.—*B. & Br. Ann. N.H.* no. 508, t. 5, f. 6.

On dead wood. July. Lancashire.

Patches thin, effused, finely velvety; threads short, linear, slender, obscurely articulated, even when most transparent; spores of a deep rich brown, varying greatly in size and length, but always more or less turbinate; attenuated greatly below, obtuse above, with a sudden more or less truncate apiculus, which often seems as if a joint had separated from it. Distinguished from all the other species by the peculiar shape and character of the spores.—*B. & Br.*

1717. Helminthosporium obovatum. *Berk.* "Obovate Helminthosporium."

Flocci subulate, multi-articulate, nearly equal; spores obovate, brown, biseptate.—*Berk. Ann. N.H. no. 232, t. 13, f. 19.*

On old planks exposed to wet.

Forming a short dense velvety-black stratum, flocci very slightly attenuated, subulate, either nearly straight, or slightly flexuous; spores broadly obovate, with two dissepiments, which divide them into three very unequal articulations.—*M. J. B.*

1718. Helminthosporium delicatulum. *Berk.* "Delicate Helminthosporium."

Very delicate, flocci subulate, multi-articulate; spores oblong, obtuse, 4-5 septate, pellucid; with an occasional vertical septum.—*Berk. Ann. N.H. no. 233, t. 13, f. 20.*

On stems of *Umbellifers*. King's Cliffe.

Forming very delicate soft patches of scattered filaments, presenting to the naked eye a cloudy black spot; flocci very slender, subulate, multi-articulate, brown, paler at the tips; spores nearly colourless, oblong, with the apices very obtuse, consisting of about five swollen articulations, one or two of which have occasionally a vertical dissepiment.—*M. J. B.*

1719. Helminthosporium sticticum. *B. & Br.* "Grass Helminthosporium."

Spots gregarious, punctiform, black; spores oblong-clavate, uniseptate.—*B. & Br. Ann. N.H. no. 758, t. 15, f. 10.*

On decaying leaves of grass. Batheaston.

Disposed in minute specks, jet black, threads fasciculate, nodose or irregular; spores .0016 in. long, oblong, swollen above, uniseptate. The punctiform spots, black not olivaceous hue, and uniseptate spores are the characteristics of this species.—*B. & Br.*

1720. Helminthosporium clavariarum. *Desm.* "Parasitic Helminthosporium."

Flocci densely aggregated, simple, very short, straight, obtuse, septate, black; spores large, oblong, 1-2 septate, pellucid or

opaque.—*Desm. Ann. Sc. Nat.* ii. t. 2, f. 2. *Berk. Ann. N.H.* no. 123.

On *Clavaria rugosa*. King's Cliffe.

1721. Helminthosporium oosporum. *Corda*. "Egg-spored Helminthosporium."

Flocci scattered, simple, black-brown, semi-pellucid; spores oblong-ovate, tetradymous, yellowish brown, pellucid.—*Corda*. 1, f. 200. *B. & Br. Ann. N.H.* no. 944. *Kl. exs.* no. 1789.

On sticks. Feb. East Bergholt.

(Fig. 246, magnified.)

1722. Helminthosporium apiculatum. *Corda*. "Apiculate Helminthosporium."

Tufts effused, tomentose, very black, flocci fasciculate, flexuous, quite simple, brown, pellucid, spores elliptico-fusiform, polyseptate, of the same colour, apical joint apiculate.—*Corda*. i. f. 191. *B. & Br. Ann. N.H.* no. 945.

On dead wood. Twycross.

1723. Helminthosporium apicale. *B. & Br.* "Tip-spored Helminthosporium."

Flocci simple, even, attenuated upwards; spores apical, elliptic, 3 septate, hyaline at each extremity.—*B. & Br. Ann. N.H.* no. 947, t. 16, f. 15.

On rotten sticks. April. Langley, Wilts.

Threads simple, even, attenuated upwards, articulated, the ultimate joint having two or three little inequalities, to each of which is attached an elliptic spore .0007 in. long, triseptate, dark in the centre, and hyaline at either extremity —*B. & Br.*

1724. Helminthosporium altum. *Preuss.* "Tall Helminthosporium."

Tufts effused, tomentose, very black, flocci slender, long, simple, subpellucid, then very black and opaque; spores apical, oblong or pyriform, attenuated, more or less septate, brown-black, pellucid.—*Sturm.* xxvi. t. 17. *B. & Br. Ann. N.H.* no. 948.

On dead sticks. Twycross.

1725. Helminthosporium scolecoides. *Corda*. "Long-spored Helminthosporium."

Tufts indeterminate, black; flocci simple, then branched, brown, angularly flexuose, rigid, semi-pellucid; spores very long

torulose, multiseptate, brown, basal and apical joint yellowish, pellucid.—*Corda. i. f. 179. B. & Br. Ann. N.H. 1865, no. 1052.*

On dead herbaceous stems. Twycross.

1726. Helminthosporium rhabdiferum. B. & Br.
"Peach Helminthosporium."

Flocci erect, slightly branched, very short; spores straight, multiseptate, articulations torulose, brown.—*B. & Br. Ann. N.H. (1865), no. 1053. Macrosporium rhabdiferum. Gard. Chron. 1864, p. 938, with fig.*

On ripe peaches. Sept. Bodelyddan.

Shallow pits about half an inch in diameter appear on the surface of the fruit, the centre of which is occupied by the mould, bearing a profusion of spores, so as to blacken the finger when touched; mycelium of waved articulated threads, giving off stouter erect flocci, with shorter joints, slightly branched above, bearing at their tips the large spores, which are at first oblong and pale, with one or two transverse septa. These rapidly acquire a dark tint, elongate, become more or less linear, with 7-11 swollen divisions, the terminal one mostly apiculate, $\frac{1}{500}$ – $\frac{1}{250}$ in. long.—*M. J. B.*

1727. Helminthosporium dendroideum. B. & Br. "Tree-like Helminthosporium."

Flocci erect, attenuated upwards, articulated, ramuli short; spores terminal, oblong fusiform, multi-articulate.—*B. & Br. Ann. N.H. no. 946, t. 16, f. 14.*

On maple. Feb. Batheaston. [S. Carolina.]

Threads attenuated upwards, articulated; each joint above giving off one or two short branchlets, terminated by an oblong, subfusiform, slightly curved, multi-articulate spore, '0024 in. long, each joint containing a globose nucleus.—*M. J. B.*

This species seems rather to belong to *Acrothecium* as emended.

1728. Helminthosporium echinulatum. Berk. "Echinulate Helminthosporium."

Flocci fasciculate, irregularly nodose; spores hyaline, cylindrical 2-4 septate, echinulate.—*Gard. Chron. (1870), p. 382, fig. 63.*

On leaves of carnations.

Leaves studded with large round white spots, on which a brown mould is developed, arranged in little concentric tufts; threads extremely regular, forming little fascicles, slightly branched, branches often assuming the form of knots, and the upper knots in some cases bearing the spores, while occasionally they occupy the colourless upper portion of the threads; spores cylindrical, with from two to four articulations, slightly constricted occasionally at the dissepiments, and beautifully echinulate, $\frac{1}{833}$ – $\frac{1}{555}$ in.—*M. J. B.*

1729. Helminthosporium reticulatum. Cooke. "Reticulate Helminthosporium."

Forming dendritic and reticulated patches on both surfaces of the leaves, orbicular or irregular; flocci slender, flexuous, generally simple; spores elliptical, obtuse, triseptate.—Cooke. *exs. no.* 360.

On dead leaves of ash. Dec.

This species has more the appearance of an *Asteroma* than an *Helminthosporium* to the naked eye. In habit, at least, it is very distinct.

Gen. 212. MACROSPORIUM, Fries.

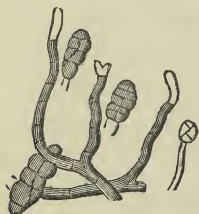


Fig. 247.

Flocci obscure or delicate; spores erect, basal, pedicellate, with at length transverse and vertical septa.—Berk. *Outl. p.* 345. *Eng Fl. v. p.* 339.

(Fig. 247.)

1730 Macrosporium cheiranthi. Fr. "Common Macrosporium."

Flocci decumbent, extremely fugacious; sporidia pyriform, articulato-septate, black; peduncle short.—Fr. *S.M. iii. p.* 374. *Eng. Fl. v. p.* 339.

On damp paper, decaying plants, &c. [United States.]

var. β. betæ. Cooke. Spores scarcely coloured.—Cooke *exs. no.* 197. *Macrosporium commune.* Rabh. *F.E. no.* 1360.

On leaves of beet.

The sporidia vary extremely in form, some are clavate, with a single row of articulations, in others the two or three upper cells have a vertical septum; others are broadly clavate, and others again obovate, each articulation divided by vertical partitions into many cells. All are more or less constricted. The flocci are very delicate, and difficult to detect, though certainly present. The peduncles vary in length; more than one are sometimes given off by the same thread of the mycelium.—M. J. B. Probably a condition of *Sphaeria herbarum*.

1731. Macrosporium sarcinula. Berk. "Gourd Macrosporium."

Flocci suberect, delicate, fugacious, slightly branched; spores

clavate, at length subrectangular, multiseptate, constricted, variable.—*Berk. Ann. N.H. no. 125, t. 8, f. 10.*

On decaying orange gourds. King's Cliffe.

Its first appearance is that of orbicular white downy patches, consisting of suberect slightly branched threads. These soon vanish, leaving a dark-olive green stratum, consisting at first of short clavate filaments, with one or two septa. Their apices gradually become much incrassated, and the number of articulations increases. The septa are mostly horizontal, with a few vertical ones; a few occasionally are inclined. In this state the colour is yellowish when viewed by transmitted light. The spores gradually assume a browner tint, become more and more distinct from the peduncle, and at length fall off, acquiring a rectangular outline, resembling very much little corded bales, from which circumstance the name is taken. They vary greatly in size, and in the number of cells. A few of the peduncles are seen amongst the spores, their articulations being frequently swollen above.—*M. J. B.*

See also *Sphaeria herbarum*, of which this is a conidiophorous condition.

**1732. *Macrosporium concinnum.* *Berk.* “Powdery
Macrosporium.”**

Spots pulverulent, velvety, black; flocci flexuous, articulated, brown; spores obovate, pedicellate, at length oblong.—*Berk. Ann. N.H. no. 235, t. 12, f. 21. Helminthosporium striæforme. Corda.*

On decorticated osier twigs of an old hamper. Sept. Ape-
thorpe.

Spots elongated, black; flocci minute, waved, brown below, pellucid above, often with the rudiment of a branch at the apex; spores obovate, with about three principal dissepiments, which are divided vertically or obliquely, furnished with a very short pellucid peduncle. This peduncle at length vanishes, and they lose their obovate form and become oblong.—*M. J. B.* (Fig. 247.)

**1733. *Macrosporium brassicæ.* *Berk.* “Cabbage Macros-
porium.”**

Flocci obsolete, sporidia clavate, antennæform, 5-11 septate, rather longer than the peduncle.—*Eng. Fl. v. p. 339.*

On decaying cabbage leaves. King's Cliffe.

Intermixed with *Cladosporium herbarum*, of which it is probably a condi-
tion.

**1734. *Macrosporium heteronemum.* *Desm.* “Arrow-head
Macrosporium.”**

Flocci erect, septate, of two forms, distinctly united in small fascicles; spores large, pedicellate, oblong-clavate, tawny, with the endochrome divided transversely, and here and there longi-
tudinally, into numerous cells; pedicels hyaline.—*Ann. des Sc. Nat. 1853, xx. p. 216. Desm. exs. ed. ii. no. 7. Cooke Seem. Journ. Bot.*

On fading leaves of *Sagittaria sagittifolia*. Sept. Instead, Norfolk. Bungay, Suffolk.

On both surfaces of the leaves; spots scattered, tawny, irregular, sometimes confluent; flocci of two kinds, one conidiiferous, short, nodulose, tawny; the other simple, elongated, subflexuose, hyaline, obtuse above, and attenuated below.

Gen. 213.

MYSTROSPORIUM, Corda.



Fig. 248.

Flocci erect or ascending, quite simple, septate, torulose, opaque, bearing a solitary spore at the apex; spores multicellular.—Corda. *Ic. ii. p. 13.*

(Fig. 248.)

1735. Mystrosporium stemphylium. Corda. "Obovate Mystrosporium."

Tufts broadly effused, black; flocci short, flexuose, erect, olive-brown; spores obovate, polymorphous, unequal, multicellular, brown, yellow, or olive; peduncular appendage paler.—Corda. *ii. f. 61. B. & Br. Ann. N.H. no. 949. Pay. f. 324.*

On dead wood. Bury St. Edmunds. (Fig. 248.)

Spores .0015 in. diameter.

Gen. 214.

ACROTHECIUM, Corda.



Fig. 249

Flocci creeping or erect, septate, simple or branched, branches ascending; spores clustered at the apex, or solitary at the tips of the branches; septate.—Corda. *Ic. ii. p. 10.*

The typical species of Corda has the flocci creeping, and branched, the spores solitary and fusiform. The generic character has been extended, so as to include *A. multi-sporum*, Preuss, and the British species, which could hardly have been retained under the original characters. (Fig. 249.)

1736. *Acrothecium simplex.* Berk. "Simple Acrothecium."

Flocci simple, flexuous, irregular, septate, brown; spores few, apical, 4-5 septate, oblong, sub-clavate, hyaline, slightly coloured.—*B. & Br. Ann. N.H. no. 950, t. 16, f. 16.*

On nettle stems. Dec. Batheaston.

Spores terminal, about three together. Differs from *A. multisporum*, Preuss, in the simple stem, without any creeping threads, and the small number of spores. (Fig. 249.)

1737. *Acrothecium delicatulum.* B. & Br. "Delicate Acrothecium."

Effused, black, flocci straight; spores linear, with one or more septa, hyaline.—*B. & Br. Ann. N.H. no. 1055, t. xiv. f. 11.*

On dead wood, probably beech and bramble.

The spores are confined to the upper part of the stem, but not to the apex itself. Occasionally the flocci are forked. Spores .00045-.0007 in. long. The form which occurs on bramble has scattered flocci, but differs in no other respect.—*B. & Br.*

Gen. 215.

SEPTOSPORIUM, Corda.

Flocci erect, sparsely septate; spores heterogenous, cellular, pedicellate; pedicels septate.—*Corda. Ic. i. p. 12.*

1738. *Septosporium bulbotrichum.*

Corda. "Bulbous Septosporium."

Tufts effused, thin, brown; flocci simple, bulbous at the base, septate, obtuse, darker below, brown, yellowish above, diaphanous; spores pedicellate, oblong-clavate, yellowish, pedicels septate, attenuate, attached at the base.—*Corda. Icon. i. f. 176. Corda. Anl. t. B. f. 10, no. 7. Pay. f. 332.*

On rotten wood.



Fig. 250.

Externally resembling a *Helminthosporium*. The base of the flocci is decidedly bulbous, and to it the spores are attached. (Fig. 250 magnified.)

Gen 216.

TRIPOSPORIUM, Corda.

Flocci erect, jointed, bearing at their apices tri-radiate, articulated spores.—*Berk. Outl. p. 345.*

(*Fig. 251.*)



Fig. 251.

1739. Triposporium elegans.

Corda. "Elegant Triposporium."

Mycelium slender, effused, brown; flocci slender, simple, or branched, brown, intricate, remotely septate; spores stellate, brown in the centre, rays paler, apices and pedicel colourless.—*Corda. i. f. 220. Bon. t. 3, f. 75. Corda. Mucedinees t. x.*

Pay. f. 329. Quekett Journ. ii. 1870, t. 8. B. & Br. Ann. N.H. no. 509 & 1053.*

On decorticated oak. Feb. Somerset. [Low. Carolina.]

The spores vary considerably in length and in the number of articulations. Sometimes this mould occurs with globose spores at the tips of the three terminal processes.—*M. J. B.*

(*Fig. 251, flocci and spores magnified.*)

Gen. 217.

HELICOMA, Corda.

Flocci erect, dark, jointed, bearing on their sides pale, flat, spiral spores.—*Berk. Outl. p. 345.*

(*Fig. 252.*)

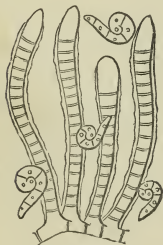


Fig. 252.

1740. Helicoma Mulleri. *Corda.*

"Muller's Helicoma."

Tufts broadly effused, tomentose, olive-black; flocci fasciculate, connate, simple, straight, rigid, apex somewhat thickened, brown, pellucid, septate; spores spirally convolute, 5-septate, colourless, hyaline.—*Corda. i. t. f. 219.*

Corda. Anl. t. B. f. 11, no. 4. Fckl. exs. no. 105. B. & Br. Ann. N.H. no. 510.

On dead wood.

[Low. Carolina.]

The spire of the spores generally open, but sometimes closed up. The threads also vary much. The British specimens are somewhat doubtfully referred to Corda's species, as a variety. In American specimens the spores accord with Corda's fig., but the threads are differently articulated.

(Fig. 252.)

Gen. 218.

HELICOCORYNE, Corda.

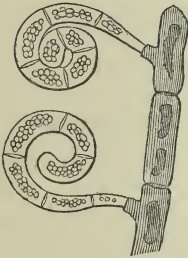


Fig. 253.

colourless, hyaline.—Corda. *Icon. vi. f. 38. B. & Br. Ann. N.H. no. 951.*

On dead wood.

(Fig. 253.)

Gen. 219.

CLADOTRICHUM, Corda.



Fig 254.

Flocci erect, thick, branched, upper joints cup-shaped or inflated; spores large, septate.—*Berk. Outl. p. 345. (Fig. 254.)*

1742. Cladotrichum triseptatum.
B. & Br. "Triseptate Cladotrichum."

Flocci forked, very much branched, articulated, upper articulations inflated; spores oblong, very obtuse, constricted in the middle, triseptate.—*Ann. N.H. no. 511, t. 5, f. 7.*

On dead stumps. July. King's Cliffe.

Widely effused, forming a thin black, powdery stratum; flocci forked and branched, septate from the base; upper articulations swollen in the centre, or above; spores oblong, extremely obtuse, constricted in the centre, triseptate, the central septum answering to the line of constriction. (Fig. 254.)

Gen. 220.

POLYTHRINCUM, Kunze.

Fig. 255.

Flocci moniliform; spores springing from the midst of the flocci, didymous.—*Berk. Outl.* p. 346. *Eng. Fl.* v. p. 338. (Fig. 255.)

1743. Polythrincium trifolii. *Kze.* "Clover Polythrincium."

Flocci densely crowded, erect, gradually thickened upwards, closely articulated, moniliform; spores oval, uniseptate, scattered.—*Kunze. M.H. t.* 1, f. 8. *Bisch.f.* 3721. *Corda. Anl. t. B.f.* 10, no. 6. *Cooke exs.* no. 196. *Grev. t.* 216. *Moug. exs.* no. 688. *Bart. exs.* no. 84. *Corda. t.* 9. *Eng. Fl.* v. p. 338. *Fckl. exs.* no. 58. *Berk. exs.* no. 97. *Farinaria trifolii*, *Sow. t.* 396, f. 7.

On fading leaves of *Trifolium*. Common. [United States.]

Forming little black sooty dots on the leaves, often in company with *Ascochola Trifolii* or *Dothidea Trifolii*, probably conidia of the latter species. (Fig. 255.)

Gen. 221.

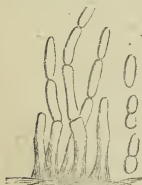
CLADOSPORIUM, Link.

Fig. 256.

Flocci flexuous, more or less branched, jointed, flexible; spores short, at length uniseptate, springing from the sides or terminal.—*Berk. Outl.* p. 346. (Fig. 256.)

1744. Cladosporium herbarum. *Lk.* "Common Cladosporium."

Tufts effused, soft, dense, green, then olive-black; flocci collapsing, pellucid, as well as the olivaceous spores.—*Link. Sp.* 1, p. 39. *Fr. S.M.* iii. p. 370. *Eng. Fl.* v. p. 338. *Nees.f.* 64, B. *Cooke exs.* no. 352. *Dematium articulatum*, *Sow. t.* 400, f. 8. *Fl. Dan. t.* 2277, f. 2. *Corda. Anl. t. B.f.* 10, no. 1. *Bisch.f.* 3733.

Hedw. i. t. 10. *Pringsh. Jahrb.* ii. t. 30, f. 27. *Kl. exs.* no. 67, ii. no. 333. *Fckl. exs.* no. 110.

On all sorts of decaying substances. Common.

[United States.]

One of the commonest of Fungi, and very variable. Numerous species have been characterized, but it is questionable whether many of them should not be united under this, which scarcely claims a place as a distinct species, since Tulasne has indicated its affinity with *Sphaeria herbarum*, of which he regards it as a conidiophorus condition, as well as *Macrosporium sarcinula*, Berk. and probably *Macrosporium cheiranthi* Fr. (Fig. 256.)

1745. *Cladosporium epiphyllum.* Nees. "Leaf *Cladosporium.*"

Flocci erect, at length declining, fasciculate, sub-olivaceous, intricately branched, mixed with concatenate threads of simple spores of the same colour, which afterwards become septate.—*Nees. Syst.* ii. p. 67. *Rabh. F.E.* no. 77. *Kl. exs.* no. 187. *Cooke exs.* no. 188. *Fckl. exs.* no. 113. *Corda. Ic.* 1, p. 14, f. 204.

On dead leaves.

Forming small scattered tufts, more or less orbicular, particularly on oak leaves.

1746. *Cladosporium fasciculare.* Fr. "Fasciculate *Cladosporium.*"

Fascicles minute, slightly erumpent, flocci bent at the apex, sub-septate; spores conglobate and seriate, of the same colour or pellucid.—*Fr. S.M.* iii. p. 370. *Corda. iii. t. i. f.* 20. *Pers. Disp. t.* 4, f. 2. *Fckl. exs.* no. 109.

On asparagus stems. (A. Jerdon.)

1747. *Cladosporium dendriticum.* Wallr. "Dendritic *Cladosporium.*"

Flocci very short, simple, disposed in minute punctiform fascicles, which become confluent in dendritic spots; spores fusiform, simple, sometimes clavate.—*Wallr. Fl. Germ.* ii. p. 169. *Ann. N.H.* no. 512. *Fckl. exs.* no. 115, *C. pyrorum*, Berk. *Gard. Chron.* 1848. p. 398. *Helminthosporium pyrorum*, Lib. *exs.* no. 188. *Desm. exs.* no. 1051. *Actinonema cratægi*, *Gard. Chron.* (1855), p. 725. *Berk. exs.* no. 42.

On pear leaves. Autumn.

var. β . *orbiculatum*. Spores pyriform, shorter.—*Berk. Gard. Chron.* 1848, p. 716. *C. orbiculatum*, *Desm. exs.* no. 1843. *B. & Br. Ann. N.H.* no. 513.

On leaves of *Cratægus pyracantha*. Chiswick.

- 1748. *Cladosporium bacilligerum.* Mont.** "Anomalous *Cladosporium.*"

Flocci slender, simple or branched, flexuous, clustered in small sooty tufts; apex incrassated, obtuse, olivaceous, septate; spores simple, stipitate, separating with an articulation.—*Mont. Ann. Sc. Nat.* vi. p. 31, t. 12, f. 5. *Cooke exs.* no. 290. *Passalora bacilligera*, *Fr. S.V.S.* p. 500. *Fres. Beitr. t.* xi. f. 55-58. *Fckl. exs.* no. 1518.

On fading leaves of *Alnus glutinosa*.

The spores resemble in form those of some species of *Puccinia*, since, in separating from the flocci, they carry with them the last articulation, so that they appear to be long uniseptate spores. It is a very distinct and curious species.

- 1749. *Cladosporium depressum.* B. & Br.** "Depressed *Cladosporium.*"

Maculæform, depressed; spores elongated, uniseptate; flocci very short, equal.—*Ann. N.H.* no. 514, t. 5, f. 8.

On leaves of *Angelica sylvestris*.

Spots minute, scattered, olive-green, depressed; flocci short, straight, or flexuous, sometimes quite even, sometimes waved or nodulose; spores much elongated, as long as the threads, terminal, uniseptate. Sometimes they are constricted and the articulations much swollen. They often germinate *in situ*, giving out a delicate waved thread from the centre of the articulations.—*B. & Br.*

- 1750. *Cladosporium brachormium.* B. & Br.** "Concatenate *Cladosporium.*"

Effused, grey; flocci erect, flexuous, nodulose above; spores oblong, shortly concatenate, terminal.—*B. & Br. Ann. N.H.* no. 515.

On leaves of *Fumaria officinalis*. King's Cliffe.

Gray, forming a thin stratum; flocci erect, flexuous, somewhat nodulose, terminated by one or more short rows of elliptic-oblong spores. It approaches the genus *Dendryphium*.

- 1751. *Cladosporium lignicolum.* Corda.** "Wood *Cladosporium.*"

Tufts effused, tomentose, black; flocci short, sub-simple, brown; spores minute, of the same colour, multiseptate.—*Corda. i. t.* 3, f. 206. *B. & Br. Ann. N.H.* no. 516. *Kl. exs.* no. 1271.

On dead wood. Apethorpe.

"The spores in this species are very opaque. It is just the plant of *Corda*, but a doubtful *Cladosporium.*"—*M. J. B.*

1752. Cladosporium nodulosum. *Corda.* "Nodulose Cladosporium."

Tufts oblong, narrow, olive-brown, then blackish; flocci cæspitose, long, flexuous, pale brown, curved at the apex, simple, with very short lateral projections, or nodular spurious branchlets; spores large, oblong, or cuneate, simple or uniseptate.—*Corda.* i. t. 4, f. 212. *B. & Br. Ann. N.H.* no. 517. *Kl. exs.* ii. no 765.

On dead herbaceous stems. Feb. Wraxall, Som.

Remarkable for the alternate projections on which the spores are seated.

Gen. **222. ARTHRINIUM,** Kunze.



Fig. 257.

Flocci erect, septate, dark, and slightly thickened at the septa; spores straight, swollen in the middle, and pointed at either extremity (fusiform).—*Berk. Outl.* p. 346. (*Fig.* 257.)

1753. Arthriniu sporophlæum. *Kze.* "Sedge Arthriniu."

Flocci slender, rather short; spores oblong, acute, minute, very copious.—*Fres. t.* 3, f. 49-52. *Kunze. M.H.* ii. p. 104. *B. & Br. Ann. N.H.* no. 519. *Fckl. exs.* no. 128. *A. puccinioides, Berk. exs.* no. 311. *Desm. exs.* no. 602. (*Fig.* 257.)

On *Carices*.

Gen. **223. GONATOSPORIUM,** *Corda.*

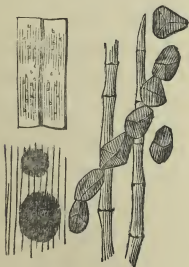


Fig. 258.

Flocci erect, septate, thickened at the septa; spores irregularly biconical, and in consequence somewhat angular, attached in whorls.—*Berk. Outl.* p. 346. (*Fig.* 258.)

1754. Gonatosporium puccinioides. *Corda.* "Sedge Gonatosporium."

Tufts round, black, shining, minute, gregarious; flocci erect, subulate, septate, swollen at the septa, diaphanous, simple, very rarely branched; spores

brown, yellow when young, polymorphous, angular.—*Fckl. exs.* no. 126. *Corda. iii. t. 1, f. 18.* *B. & Br. Ann. N.H. no. 236-519.* *Torula Eriophori. Eng. Fl. v. p. 359.*

On various *Carices*. Wilts. Somerset. (*Fig. 258.*)

Gen. 224.

CAMPTOUM, Link.



Fig. 259.

On *Scirpus sylvaticus*. Spye Park, Wilts. (*Fig. 259.*)

Flocci erect, septate, thickened at the apex and black; spores curved, dark, fixed in clusters at the apices.—*Berk. Outl. p. 347.*

(*Fig. 259.*)

1755. Camptoum curvatum. Lk.
"Curved Camptoum."

Tufts minute, very black; flocci dwarf, erect, with black and white bands; spores large, brown, polymorphous, curved.—*Link. Sp. i. p. 44.* *B. & Br. Ann. N.H. no. 518.* *Berk. exs. no. 310.* *Kl. exs. no. 461.* *Corda. Anl. t. B. f. 12, no. 6.* *Fckl. exs. no. 127.*

Gen. 225.

SPORODUM, Corda.

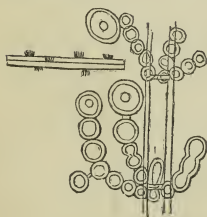


Fig. 260.

Flocci erect, septate; threads of inarticulate spores moniliform, seated towards their base.—*Berk. Outl. p. 347.*

(*Fig. 260.*)

1756. Sporodum conopleoides.
Corda. "Grass Sporodum."

Tufts minute, hemispherical, black; flocci quite simple, septate, rather obtuse, dark-brown; spores at first yellow, then brown, globose nucleus darker.—*Corda. i. t. 247, iii. t. i. f. 22.* *Corda. Anl. t. B. f. 14, no. 1.2.* *Kl. exs. no. 774.* *B. & Br. Ann. N.H. no. 543.* *Dematium hispidulum. Ann. N.H. vii. no. 234.* *Fr. S.M. iii. p. 366.* *Lib. exs. no. 284.* *Fckl. exs. no. 104.*

On dead grasses. Common.

From the middle of the flocci spring one or two obovate joints, which support two or three rows of sporidia, of which those at the apices are the largest.—*M. J. B.*

(*Fig. 260.*)

Order XXI. MUCEDINES.

Threads never coated with a distinct membrane, mostly white or coloured, more rarely dingy.—*Berk. Outl.* p. 347.

Flocci forming a common stem.

Spores moniliform, in cylindrical heads . . . *Stysanus*. 605

Flocci free, mostly simple.

With a globose head.

Spores in moniliform threads . . . *Aspergillus*. 588

Spores singly, on spicules . . . *Rhopalomyces*. 618

Clavate above.

Spores in moniliform threads . . . *Nematogonum*. 599

Spores singly on spicules . . . *Rhinotrichum*. 540

Not expanded above.

Spores moniliform in fascicles . . . *Monilia*. 606

Spores moniliform, simple . . . *Oidium*. 603

Spores moniliform, septate . . . *Cylindrium*. 604

Curled at the tips.

Spores globose, conglomerated . . . *Bolacotricha*. 612

Joints swollen.

Spores obovate, on spicules . . . *Gonatobotrys*. 616

Flocci dichotomous.

Black, spores scattered . . . *Virgaria*.

Pallid, spores scattered at the tips . . . *Haplaria*. 549

Flocci with quaternate branches.

Spores in spikes . . . *Clonostachys*. 616

Flocci branched, erect.

Spores simple.

Single and terminal.

Threads septate . . . *Botrytis*. 591

Threads seldom septate . . . *Peronospora*. 592

In terminal clusters . . . *Polyactis*. 607

In basal clusters . . . *Myxotrichum*. 612

Moniliform in tassels . . . *Penicillium*. 606

In heads on spicules . . . *Botryosporium*. 617

Elongated, in terminal bundles . . . *Menispora*. 614

Spores septate.

Terminal . . . *Dactylium*. 606

Flocci subulate, branched below.

Spores cylindrical . . . *Chætopsis*. 614

Flocci branched, tips spiral.

Spores globose, granulate . . . *Acrospeira*. 598

Flocci branched in whorls.

Spores terminal, single . . . *Verticillium*. 598

Spores terminal, in globose masses . . . *Gonytrichum*. 615

Flocci decumbent.

Spores solitary, terminal . . . *Acremonium*. 614

Spores scattered . . . *Sporotrichum*. 609

Spores studding a cellular head . . . *Papulaspora*. 617

Spores globose, threads cut half through . . . *Zygodesmus*. 611

Flocci evanescent.

Spores straight, fusiform . . . *Fusidium*. 609

Gen. 226.

ASPERGILLUS, Mich.

Fig. 261.

cus. Sov. t. 378, f. 9. Corda. St. t. 7. Mucor. aspergillus. Bull. t. 504, f. 10.

On various decaying substances, as lard, bread, cheese, &c. Very common. Variable in colour. [United States.]

"Flocci indistinctly articulate when fresh; head covered with a subpellucid grumous substance, on which are seated the globose sporidia arranged in radiating moniliform threads."—*M. J. B.* (Fig. 261.)

1758. *Aspergillus dubius.* Corda. "Doubtful Aspergillus."

Tufts minute, white; stem simple, straight, pellucid; capitulum globose, white, covered with linear, clavate sporophores, which bear the chains of obovate, unequal, colourless spores.—*Corda. ii. t. 4, f. 77. B. & Br. Ann. N.H. no. 520.*

On rabbit's dung. Nov. King's Cliffe.

In this very curious species the head is covered with linear processes, each of which is surmounted by four sterigmata, on which are developed the chains of spores.—*M. J. B.*

1759. *Aspergillus candidus.* Lk. "White Aspergillus."

Sterile flocci effused, white; fertile threads simple, thickened at their apices; sporidia compact, white.—*Berk. Eng. Fl. v. p. 339. Chev. t. iv. f. 17. Fr. S.M. iii. p. 385.*

On various decaying substances. Common.

Smaller than *Aspergillus glaucus*, with a stiffer habit and more compact sporidia.

1760. *Aspergillus roseus.* Lk. "Pink Aspergillus."

Mycelium thin; fertile flocci simple; sporidia globose, rose-red.—*Berk. Eng. Fl. v. p. 340. Batsch. f. 58.*

On damp paper, lint, carpet, &c. [Mid. Carolina.]

"Flocci not septate; sporidia globose, minute, arranged in moniliform rows."—*M. J. B.*

1761. *Aspergillus mollis.* Berk. "White-branched *Aspergillus.*"

Fertile flocci white, erect, dichotomously branched; apices clavate; sporidia large, subglobose.—*Berk. Eng. Fl. v. p. 340.*

On dead leaves. Winter.

"Forming minute, scattered, pure white fascicles, with a thin procumbent mycelium."—*M. J. B.*

1762. *Aspergillus virens.* Lk. "Green-branched *Aspergillus.*"

Tufts rather dense; flocci entangled, sub-erect, heads as well as the branched flocci greenish.—*Berk. Eng. Fl. v. p. 340. Fr. S.M. iii. p. 388. Grev. Fl. ed. p. 467.*

On decaying *Agarics*.

Gen. 227. NEMATOGONUM, Desm.



Fig. 262.

Threads clavate at the apices, and bearing necklaces of spores on distinct scattered spicules.—*Berk. Outl. p. 348.* (Fig. 262.)

1763. *Nematogonium aurantiacum.* Desm. "Orange *Nematogonium.*"

Mycelium delicate, effused; flocci ferruginous-orange; spores of the same colour, oval.—*Desm. Ann. Sc. Nat. (1834), ii. t. 2, f. 1. Berk. Outl. p. 348. Aspergillus aurantiacus. Ann. N.H. no. 237, t. 13, f. 22. Berk. exs. no. 272.* (Fig. 262.)

On elm bark. Apethorpe. [Low. Carolina.]

When in perfection the threads are simple, and the spores attached in moniliform rows to a larger one at their base. It has, however, a great tendency to become proliferous, especially when it has been beaten down by the weather.—*M. J. B.*

- 1764. Nematogonum aureum.** Berk. "Golden Nematogonum."

Fertile flocci erect, short, simple, clavate; sporidia large, thinly scattered, elliptic, golden yellow.—*Aspergillus aureus*. Berk. *Eng. Fl.* v. p. 340.

On bark.

"Flocci short, consisting of about four articulations, clavate above, and covered thinly with large, subelliptic, yellow sporidia."—*M. J. B.*

Gen. 228.

RHINOTRICHUM, Corda.

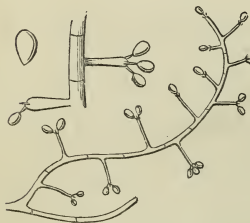


Fig. 263.

Threads erect, articulate, clavate above, and bearing spores attached to spicules.—*Berk. Outl.* p. 348. (*Fig.* 263.)

- 1765. Rhinotrichum Bloxami.** B. & Br. "Bloxam's Rhinotrichum."

Scattered, white; fertile flocci clavate above; spores white, subelliptic.—*Ann. N.H.* no. 541, t. 7, f. 19.

On dead wood. Twycross.

[S. Carolina.]

Patches irregularly effused, seldom continuous, white or cream-coloured; mycelium decumbent, white, septate; fertile flocci erect, sometimes very sparingly divided; tips clavate, bearing scattered spicules, surmounted by subelliptic or slightly obovate spores, which are sometimes obtuse, sometimes apiculate; sometimes the ultimate articulations are moniliform, very rarely the penultimate joint has one or two spicules.—*B. & Br.*

- 1766. Rhinotrichum Thwaitesii.** B. & Br. "Thwaites' Rhinotrichum."

Epigæous, yellow, effused; hyphasma woven; fertile flocci ascending, dichotomous, apices slightly thickened.—*B. & Br. Ann. N.H.* no. 542, t. 6, f. 12.

On the bare soil. Aug. Bristol.

Patches suborbicular or confluent, telephoroid, yellow, with a pale margin; hyphasma consisting of closely packed, decumbent, articulate threads, the ends of which rise up and are branched dichotomously, their apices swelling slightly, and clothed with globose, echinulate, shortly pedicellate spores.—*B. & Br.*

- 1767. Rhinotrichum opuntia.** B. & Br. "Cactus Rhinotrichum."

Flocci furcate, here and there swollen, ultimate ramuli clavate, with transverse rows of spores.—*Ann. N.H.* no. 761, t. 16, f. 13.

Near Woolwich.

White; flocci rather thick, simple below, two or three times forked, slight, swollen here and there; ultimate divisions clavate, beset with transverse rows of globose spores.—*B. & Br.*

1768. *Rhinothrichum repens.* Preuss. "Creeping Rhinothrichum."

Mycelium effused, cinereous; flocci branched, colourless, intricate, septate, creeping, branches erect, verrucose above, bearing ovate-acuminate, grey, smooth, nucleate spores.—*Preuss. Sturm. xxv. t. 22. B. & Br. Ann. N.H. (1866), no. 1149.*

On fallen trunks. Oct. May.

Looks like a mere bloom, so that it might easily escape notice. The spores are borne on little wart-like projections on the upper portion of the branches.

1769. *Rhinothrichum lanosum.* Cooke. "Woolly Rhinothrichum."

White, with a pale ochraceous tinge, forming dense woolly tufts, barren flocci very delicate branched, ascending, fertile flocci decumbent, long, delicate, septate, with short patent branches, tips with 2-4 spicules, each with a single, obovate, hyaline spore.—*Clinothrichum lanosum. Cooke exs. no. 356. Pop. Sci. Rev. Jan. 1871, t. 68, f. 1-3.*

On damp wall paper. April.

There are sometimes three or four, but more commonly one or two spores at the tips of the branches, each attached to a short spicule. We were at first disposed to regard this as the type of a new genus under the name of *Clinothrichum*, but, on more mature consideration, prefer including it here.
(*Fig. 263.*)

Gen. 229.

BOTRYTIS, Mich.

Threads septate, irregularly or dichotomously branched, hyaline or coloured; spores terminal.—*Berk. Outl. p. 348.*

(*Fig. 264.*)

1770. *Botrytis Tilletii.* Desm.
"Tawny Botrytis."

Fertile flocci branched, tawny, ramuli very short and verticillate; spores subglobose.—*Desm. Ann. Sc. Nat. (1838), x. p. 308. Desm. exs. no. 226. Br. & Br. Ann. no. 529.*



Fig. 264.

On moss and leaves, &c.

One of the most splendid species of the genus, remarkable for its highly branched threads and verticillate ramuli, the colour of the whole plant is pale tawny or fawn.—*B. & Br.*

1771. Botrytis citrina. Berk. "Lemon-coloured Botrytis."

At first white; fertile flocci erect, articulated, branched; branches subcymose, lemon-coloured, as well as the obovate spores.—*Berk. Ann. N.H. no. 127, t. 8, f. 12.*

On dead twigs of cherry. Summer. King's Cliffe.

Forming thin delicate mucedinous patches, about an inch across; mycelium nearly white, as indeed is the whole plant at first. (*Fig. 264.*)

1772. Botrytis Jonesii. B. & Br "Rectangular Botrytis."

Flocci erect, branched above, branches and branchlets divergent, mostly opposite, ultimate ramuli fasciculate, central always sterile, very acute; spores subglobose, echinulate.—*B. & Br. Ann. N.H. no. 760, t. 15, f. 12.*

On dung of dogs, rabbits, &c. Woolwich. Wothorpe.

Flocci erect, tinged with fawn colour, simple below, with a few straight main branches above, mostly at right angles, and often opposite. These are again divided once or twice in the same way, the central one being always barren, the others bearing about the middle fascicles of fertile branchlets, each tipped with a sub-globose echinulate spore ('0003 in.) '0075 m.m. long.—*B. & Br.*

1773. Botrytis terrestris. P. "Terrestrial Botrytis."

Fertile flocci branched above, white, branchlets quaternate, obtuse, sporiferous; spores globose.—*Pers. M.E. i. p. 38. B. & Br. Ann. N.H. no. 240, t. 14, f. 24. Stachylidium terrestre, Fr. S.M. iii. p. 391. Eng. Fl. v. p. 341. Grev. W.T. t. 5, f. 6. Grev. t. 257.*

On the naked ground.

The sporidia are seated singly on the tips of the ramuli. Mycelium dense, branched, intricate. Easily distinguished by a peculiar, scattered, dot-like mode of growth.—*M. J. B.*

Gen. 230.

PERONOSPORA, De By.



Parasitic threads mostly inarticulate; spores of two kinds, conidia on the tips of the branchlets; oospores large, globose, on the creeping mycelium.—*Berk. Outl. p. 349. (Fig. 265.)*

Fig. 265.

1774. Peronospora infestans. *Mont.* "Potato Peronospora."

Threads of mycelium slender, always destitute of suckers; fertile threads thin, gradually attenuated upwards, with one to five branches, one or more inflated vesicles near the apices of the branches; branches either simple or with short branchlets; acrospores ellipsoid or ovoid, apex furnished with a prominent papilla.—*Cooke Micro. Fungi*, t. 14, f. 264. *Pop. Sc. Rev.* iii. t. 8, f. 3. *Botrytis infestans*. *B. & Br. Ann. N.H.* no. 521. *Journ. Hort. Soc.* i. t. 4. *De Bary Ann. Sc. Nat.* (1863). xx. t. 5, 6. *Desm. exs.* no. 1492. *Rabh. exs.* no. 1879. *Fckl. exs.* no. 37. *Cooke exs.* no. 192. *Berk. exs.* no. 345.

On potato stems, leaves, and tubers, &c. Common.

Producing the well-known potato disease.

1775. Peronospora nivea. *Ung.* "Parsnip Peronospora."

Threads of mycelium stout, often torulose; suckers numerous, vesicular, obovate; fertile threads fasciculate, dwarfish, tapering or subulate, or once or twice shortly bifurcate, rarely trifurcate, with one to four horizontal branches near the summit, once, twice, or three times bifurcate; acrospores subglobose or ovoid, with an obtuse papilla at the apex.—*Cooke Micr. F. p.* *Botrytis macrospora*. *Ung. exs.* t. 2, f. 14. *B. & Br. Ann. N.H.* no. 527. *Rabh. exs.* no. 1172, *F.E.* no. 376. *Fckl. exs.* no. 27. *Cooke exs.* no. 191. *Botrytis crustosa* *Fr.* *Berk. exs.* no. 333. *Eng. Fl.* v. p. 343.

On various *Umbellifers*.

The roots of the plants which are infested with this mould are generally diseased, like the tubers of potatoes attacked by *P. infestans*.

1776. Peronospora pygmæa. *Ung.* "Anemone Peronospora."

Threads of mycelium thickened, often constricted and varicose; suckers minute, obovate, or pear-shaped; fertile threads fasciculate (2-5 or more), simple above, or divided at the apex into 2-4 short simple branches, or shortly twice dichotomous, or all simple, obtuse, surmounted by 2-4 short spicules; acrospores ovoid or ellipsoid, variable in size; apices broadly and obtusely papillate.—*Cooke Micr. Fungi*, t. 15, f. 267. *Ung. Bot. Zeit.* 1847, t. 6, f. 8. *Botrytis curta*. *Berk. Ann. N.H.* no. 128, t. 8, f. 13. *Berk. exs.* no. 209. *Corda.* v. f. 21. *Rabh. exs.* no. 373, 374. *Fckl. exs.* no. 2.

On wood-anemone.

Extremely minute, at length gray-brown; flocci simple, abbreviated, their tips denticulate.

1777. *Peronospora gangliformis*. Berk. "Lettuce Peronospora." M

Threads of the mycelium stout, now and then torulose; suckers vesicular, obovate, or clavate; fertile threads 2-6 times dichotomous, sometimes trichotomous; stems and primary branches slender, dilated or inflated above; the ultimate ramuli inflated at the apex into a turbinate or subglobose vesicle bearing from 2-8 subulate processes or spicules; acrospores minute, subglobose; apices with broad, depressed papillæ, produced on the spicular processes.—*Cooke Micr. F. t.* 14, *f.* 265. *Pop. Sc. Rev.* iii. *t.* 8, *f.* 4. *Botrytis ganglioniformis*. *Berk. Journ. Hort. Soc.* i. *t.* 4. *Ann. N.H.* no. 526. *Fckl. exs.* no. 33. *Cooke exs.* no. 190. *Rabh. exs.* no. 1775, *F.E.* no. 290. *Bremia lactucæ*. *Reg. Bot. Zeit.* 1843, *t.* 3. *B. Botrytis geminata*. *Ung. Bot. Zeit.* 1847, *t.* 6, *f.* 9.

On lettuce leaves. Spring. Common.

1778. *Peronospora parasitica*. Pers. "Cabbage Peronospora."

Threads of the mycelium thickened and much branched; suckers numerous, branched; branches clavate, obtuse; fertile threads thick, soft, flexile, equal, or unequal, 5-8 times dichotomous, rarely trichotomous; branches always repeatedly trifurcate; acrospores broadly elliptical, very obtuse at the apex, white.—*Cooke Micr. Fung. t.* 13, *f.* 262. *Pop. Sc. Rev.* iii. *t.* 8, *f.* 1. *Berk. exs.* no. 331. *Botrytis parasitica*. *Eng. Fl.* v. *p.* 343. *Pers. Obs.* i. *t.* 5, *f.* 5. *Mucor botrytis*. *Sow. t.* 359. *Ayres. exs.* no. 50. *Corda. v. f.* 18. *Rabh. exs.* no. 175 and 324, *F.E.* no. 86. *Fckl. exs.* no. 5. 8. 23. *Cooke exs.* no. 193.

On cruciferous plants. Common. [Low. & Mid. Carolina.]

1779. *Peronospora viciæ*. Berk. "Pea Peronospora."

Fertile threads densely cæspitose, erect, equal, rarely unequal. 6-7-8 times dichotomous; ultimate ramuli shortly subulate, acute; acrospores ellipsoid, very obtuse at the apex, obtuse or slightly acute at the base; membrane with a violaceous tint.—*Cooke Micr. F. t.* 15, *f.* 266, *t.* 10, *f.* 212. *Pop. Sc. Rev.* iii. *t.* 8, *f.* 5. *Botrytis viciæ*. *Berk. Journ. Hort. Soc.* i. *p.* 31. *B. & Br. Ann. N.H.* no. 524. *Rabh. exs.* ii. no. 490.

On leaves of peas and tares. Common.

- 1780. *Peronospora arenariæ.* Berk.** "Sandwort Peronospora."

Fertile threads slender, 6-7 times equally, rarely unequally, dichotomous; branches spreading; ultimate ramuli slender, acute, subulate, nearly erect; acrospores broadly elliptical, oftentimes very obtuse, small; membrane scarcely violaceous.—*Cooke Micr. F. t. 7, f. 268, t. 10, f. 211. Pop. Sc. Rev. iii. t. 8, f. 6. Botrytis arenariæ. Berk. Journ. Hort. Soc. i. p. 31. B. & Br. Ann. N.H. no. 523. Fckl. exs. no. 18. De Bary Ann. Sc. Nat. (1863), xx. t. 13, f. 8, 9.*

On leaves of *Arenaria trinervis*. June.

- 1781. *Peronospora effusa.* Grev.** "Spinach Peronospora."

Fertile threads fasciculate, short, thick, 2-6, rarely 7 times dichotomous above; acrospores broadly ellipsoid, sometimes very obtuse; membrane with a violaceous tint.—*Cooke Micr. F. t. 10, f. 214, 215. Rabh. exs. no. 1880. Fckl. exs. no. 11, 12. Botrytis effusa. Grev. Fl. ed. p. 468. Eng. Fl. v. p. 343. Desm. Ann. Sc. Nat. (1837), viii. t. 1. Cooke exs. no. 293. Berk. exs. no. 53.*

On the under side of leaves of spinach, &c. Spring and autumn. Common.

Forming effused spots 2-6 lines broad, generally rendering the leaf yellow. Flocci very short, often abruptly recurved.

- 1782. *Peronospora urticæ.* Casp.** "Nettle Peronospora."

Fertile threads small, loosely 4-6 times dichotomous; branches flexuose, ultimate ramuli subulate, arcuate, often deflexed; acrospores large, broadly ovoid or subglobose, distinctly pedicellate; apices very obtuse; membrane violaceous.—*Cooke Micr. F. p. 216. De Bary Ann. Sc. Nat. (1863), xx. p. 116. Botrytis urticæ. B. & Br. Ann. N.H. no. 522. Cooke exs. no. 292.*

On leaves of common nettle.

Patches small, orbicular, greyish lilac; flocci loosely divided above, branches forming an acute angle; extreme ramuli simple or forked, sometimes curved, very rarely inflated. Acrospores large, ovate, apex papillæform.

- 1783. *Peronospora trifoliorum.* De By.** "Clover Peronospora."

Fertile threads cæspitose; equally or unequally 6-7 times dichotomous, rarely trichotomous; ultimate branches subulate,

acute, slightly curved; acrospores ellipsoid, very obtuse; membrane with a slightly violaceous tint; oospores large; epispore brown.—*Cooke Micr. F.* p. 216. *De Bary Ann. Sc. Nat.* (1863), xx. p. 117. *Rabh. exs. no.* 775, *F.E. no.* 375. *Fckl. exs. no.* 9. *Cooke exs. no.* 194.

1784. *Peronospora grisea.* Ung. "Veronica Peronospora." M

Fertile threads erect, fasciculate, grey, 5-7 times regularly dichotomous; branches gradually attenuated; primary oblique erect, others spreading, flexuose, ultimate mostly unequal, slightly arcuate; acrospores ellipsoid or ovoid, obtuse; membrane pale and dirty violet.—*Ung. Bot. Zeit.* 1847. *Cooke Micr. F. t.* 10, *f.* 213. *Fckl. exs. no.* 10. *De Bary Ann. Sc. Nat.* (1863), xx. *t.* 13, *f.* 12. *Botrytis grisea*, *B. & Br. Ann. H.N. no.* 528.

On leaves of *Veronica beccabunga*. May.

1785. *Peronospora arborescens.* Berk. "Poppy Peronospora." M

Fertile threads slender, erect, 7-10 times dichotomous above; branches more or less flexuose, squarrose, spreading, gradually attenuated; ultimate ramuli shortly subulate, more or less arcuate; acrospores very small, subglobose; membrane scarcely violaceous.—*Cooke Micr. F.* p. 217. *De Bary Ann. Sc. Nat.* (1863), xx. p. 119. *Botrytis arborescens*, *Berk. Jour. Hort. Soc. i. p.* 31, *t.* 4, *f.* 24. *B. & Br. Ann. N.H. no.* 525. *Rabh. exs. no.* 323. *Fckl. exs. no.* 4 & 13.

On *Papaver rhæas*. Common.

1786. *Peronospora candida.* Fckl. "Primrose Peronospora."

Densely caespitose, white; fertile threads slender 6-10 times dichotomously branched; ultimate branchlets short, spreading; acrospores ellipsoid or ovoid, obtuse, minute; oospores bright brown.—*Fckl. exs. no.* 38. *De Bary. Ann. Sc. Nat.* (1863), xx. p. 120. *Cooke Micr. Fung. 2nd ed.* p. 225.

On primrose leaves. Corwen, N. Wales.

Forming dense white patches on the under surface of the leaves.

1787. *Peronospora Schleideniana.* De By. "Onion Peronospora." M

Fertile threads robust, erect, not septate, branched alternately; ultimate ramuli forked and uncinatate or divaricate; acrospores seated on the tips of the ultimate ramuli, obovoid or nearly pear-shaped, attenuated at the base; membrane of a dirty-

destruction
Bark

violet-colour.—*Cooke Micr. Fung. t. 13, f. 263. Pop. Sc. Rev. iii. t. 8, f. 2. De. Bary. Ann. Sc. Nat. (1863), xx. t. 13, f. 1-3. Botrytis destructor, Berk. Ann. N.H. no. 239, t. 13, f. 23. Fckl. exs. no. 41.*

On leaves of various species of *Allium*. Spring.

Very common and destructive in some years, preventing the plants which are attacked from coming to perfection. The individual threads are distinct, but form large patches on the leaves, or even entirely cover them. Distinguished easily by the peculiar shape of the acrospores.

1788. *Peronospora violacea.* Berk. "Scabious Peronospora."

Fertile threads branched; acrospores sub-elliptical, violet-coloured.—*Berk. Outl. p. 349. Cooke Micr. Fung. p. 217.*

On petals of *Scabiosa arvensis*.

All that is known of this species is contained in the following note from the Rev. M. J. Berkeley:—"It grew on the petals of the common scabious. I have not found it again, and have either lost or mislaid my specimens. You may describe it as *late violacea; floccis ramosis; sporis subellipticis, violaceis*. It is probably the *Farinaria* on Scabious of Sowerby."—*M.J.B.*

1789. *Peronospora sordida.* Berk. "Figwort Peronospora."

Forming broad, irregular, dirty, pallid spots on the under surface of the leaves; fertile threads loosely dichotomous above, tips forked, unequal; acrospores obovate, apiculate.—*B. & Br. Ann. N.H. no. 953. Cooke Micr. Fung. p. 217. Cooke exs. no. 291.*

On leaves of *Scrophularia*.

Forming broad, irregular, dirty, pallid spots on the under side of the leaves; threads loosely dichotomous above; tips forked, unequal; acrospores obovato apiculate (.001 in.) .025 m.m. long.

1790. *Peronospora sparsa.* Berk. "Rose Peronospora."

Fertile threads scattered, by no means torulose; ultimate branches scarcely uncinatate, dichotomous, pallid grey; acrospores sub-elliptical.—*Berk. Gard. Chron. 1862, p. 308, fig. Ann. N.H. 1865, no. 1057. Cooke Micr. Fung. p. 217.*

On the under side of rose leaves.

1791. *Peronospora obliqua.* Cooke. "Dock Peronospora."

Threads of the mycelium slender; fertile threads fasciculate, erect, simple, rarely bifurcate, attenuated upwards; acrospores large, ellipsoid, attached obliquely near the base.—*Cooke Micr. Fung. t. 16, f. 269. B. & Br. Ann. N.H. no. 1058. Cooke exs. no. 195. Ascomyces Rumicis, Mont.*

On the under surface of dock leaves. Winter and spring. Common.

Brownish circular spots on the leaves indicate the presence of this mould, which is so minute that it might otherwise be overlooked. Spores with a slight swelling towards the base ($\cdot 001$ in.) $\cdot 025$ m.m. long, often set on obliquely; sometimes they give off below a second spore, and very occasionally there is a septum in the threads.

Gen. 231.

ACROSPEIRA, B. & Br.



Fig. 266.

Hyphasma decumbent; fertile flocci erect, branched above, apex of the ramuli somewhat quadri-articulate, spirally convolute; spores subglobose, granulated, springing from one or other of the articulations.—*B. & Br. Ann. N. H. no. 952.* (Fig. 266.)

1792. Acrospeira mirabilis. B. & Br.
"Curious Acrospeira."

Fertile flocci branched; branches convolute at their apices, four terminal joints swollen; spores subglobose, springing from the second joint.—*Berk. Intr. p. 305, f. 69a. Ann. N.H. no. 952.*

On sweet chestnuts. Bristol.

A most curious fungus, in which the dark granulated spores are formed by a transformation of the second joint from the top of the branchlets. All the four terminal joints swell, but the second only in general proves fertile, though in a few instances the terminal joint also is transformed.—*M.J.B.* (Fig. 266.)

Gen. 232.

VERTICILLIUM, Link.

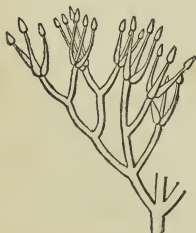


Fig. 267.

Flocci septate, hyaline or coloured; branches verticillate; spores apical.—*Berk. Outl. p. 349.* (Fig. 267.)

1793. Verticillium apicale. B. & Br.
"Short-branched Verticillium."

Effused, olivaceous-black; flocci straight, ramuli apical, very short, incrassated at the base; spores globose.—*Ann. N.H. no. 531, t. 7, f. 17.*

On decorticated oak branches. Feb. Wraxall, Somerset.

Effused, forming small dark thin patches ; flocci erect, rather closely articulate, bearing at the apex a coronet of very short branches, which are swollen at the base, and strongly attenuated upwards ; spores globose. There is sometimes the rudiment of a lower whorl of branchlets.—*B. & Br.*

1794. Verticillium nanum. *B. & Br.* "Dwarf Verticillium."

Minute, white ; flocci vagrantly branched, ramuli opposite ; spores elliptic.—*B. & Br. Ann. N.H. no. 532, t. 7, f. 18.*

On pears. Cranford Bridge.

Very minute. An obscure species, in which the whorl of ramuli is reduced to two, by which it is distinguished, as well as by the elliptic spores.

1795. Verticillium epimyces. *B. & Br.* "Parasitic Verticillium."

Effused, white, with a flesh coloured tinge ; flocci trifid ; ramuli subternate, elongated ; spores oblong.—*Br. & Br. Ann. N.H. no. 533, t. 7, f. 15.*

On decayed *Elaphomyces*. Oct. Rudloe, Wilts.

White, with a flesh coloured tinge, forming thin effused patches, which appear compact, and not the least byssoid. Threads once or twice trifid, rarely bifid, ultimate ramuli ternate or binate, slightly swollen below, attenuated upwards ; spores terminal, at first globose, then elongated, when perfect 4-5 times as long as broad.—*B. & Br.*

1796. Verticillium distans. *B. & Br.* "Distant Verticillium."

Scattered, snow-white ; flocci slender ; branches alternate, ramuli rather long, regularly attenuated ; spores oblong, endochrome bipartite.—*B. & Br. Ann. N.H. no. 534, t. 7, f. 16.*

On herbaceous stems. Cranford Bridge.

Threads short, slender, branched alternately, ramuli 4-6 in a whorl, rather long, regularly attenuated, whorls distant.

Gen. 233.

HAPLARIA, Link.



Fig. 268.

Flocci simple or forked, jointed ; spores scattered over the tips of the threads.—*Berk. Outl. p. 349.* (Fig. 268.)

1797. Haplaria grisea. *Lk.* "Grey Haplaria."

Fertile flocci scattered, sub-simple, equal, grey ; sporidia of the same colour, collected here and there in heaps upon the filaments.—*Nees. f. 49. Botrytis grisea, Berk. Eng. Fl. v. p. 342.*

On decaying vegetables. Autumn.

Especially delighting in *Sparganium*. "Flocci simple or forked, grey, slender, but rather rigid, septate; at the sides and apices are little heaps of globose grey sporidia, giving it at first a whorled aspect. They soon fall off and leave the flocci naked."—*M.J.B.* (Fig. 268.)

Gen. 234.

POLYACTIS, Link.



Fig. 269.

Flocci septate, brownish, branched above; spores hyaline, in terminal clusters.—*Berk. Outl.* p. 350. (Fig. 269.)

1798. Polyactis vulgaris. Lk. "Common Polyactis."

Flocci grey, sterile, rather fleecy; fertile divided at the apex into lobe-like branchlets, on which are collected the globose, minute sporidia.—*Nees. Sys. f.* 57. *Botrytis vulgaris. Berk. Eng. Fl. v.* p. 342. *Corda I, v, 250*

On rotting plants, gourds, and cabbages. Common.

Variable in ramification, and in colour of the sporidia. (Fig. 269.)

1799. Polyactis cana. Berk. "Hoary Polyactis."

Flocci cinereous, or whitish, sterile effuse, fertile branched at the apex; sporidia large, oval.—*Botrytis cana. Berk. Eng. Fl. v.* p. 342. *Fr. S.M.* iii. p. 397. *Cooke exs. no.* 355.

On rotting stems and leaves.

Easily distinguished from its allies by the large, oval sporidia; branches rather compact, growing in a botryoid rather than racemose form.—*Eng. Fl.*

1800. Polyactis vera. Berk. "Micheli's Polyactis."

Flocci grey, sterile rather fleecy, fertile branched above, forming spikes about the slender apices; spores?—*Botrytis vera. Berk. Eng. Fl. v.* p. 343. *Bot. spicata. Mich. t.* 91, f. 4. *Mucor. botrytis. Bolt. t.* 132, f. 3.

On *Polyporous versicolor*. Near Halifax.

This species appears to have been found by Bolton, and by no one else in Britain.

1801. Polyactis cinerea. Berk. "Cinereous Polyactis."

Fertile flocci, gregarious, subsimple, cinereous, soon strangled; spores attached here and there, globose, whiter than the flocci.—*Botrytis cinerea. Berk. Eng. Fl. v. p. 342. Pers. Disp. t. 3, f. 9, 10.*

On stems of herbaceous plants. Common. [Mid. Carolina.]

This mould is usually found springing from *Sclerotium durum*, which would seem to be the condensed mycelium of this species.

1802. Polyactis fascicularis. Corda. "Fasciculate Polyactis."

Tufts minute, black-brown, shining, frosted above; flocci erect, fastigiate, slightly flexuose, crowded, brown, semi-pellucid above and branches colourless heads of spores spherical, white, shining; spores oblong.—*Quekett Journ. 1870, t. 6. Corda. Muced. t. 16. Penicillium fasciculatum. Ann. N.H. no. 129. Berk. exs. no. 210.*

On decayed vegetable substances.

The spores are comparatively large, and the flocci connate at the base.

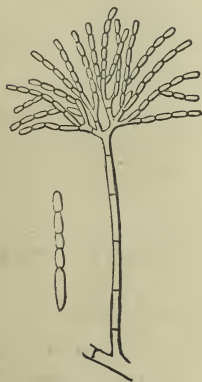
Gen. 235.**PENICILLIUM, Link.**

Fig. 270.

Flocci divided above in a fasciculate manner, septate, as well as the branchlets, which are terminated by necklaces of spores, collected into tassel-like heads.—*Berk. Outl. p. 350.*

(Fig. 270.)

1803. Penicillium crustaceum.

Fr. "Crustaceous Mould."

Sterile flocci white, forming a close crust-like web, fertile somewhat branched, intricate, bifido-penicillate above; sporidia verdigris-green.—*Berk. Eng. Fl. v. p. 344. P. glaucum. Grev. t. 58, f. 1.*

On all sorts of decaying bodies. Very common.

var. β. coremium. Fertile flocci, woven into a dense white stem.—*Floccaria glauca. Grev. t. 301. Byssus scoparia. Fl. Dan. t. 897, f. 1.*

On gum, apples, &c.

[United States.]

The mycelioid condition of this species constitutes what is known as "the vinegar plant."

1804. *Penicillium sparsum*. Grev. "Scattered *Penicillium*."

Sterile flocci effuse, fertile threads simple, scattered, penicillate above; sporidia white.—*Grev. Wern. Trans.* iv. t. 5, f. 5. *Sc. Crypt. Fl.* t. 58, f. 2. *Berk. Eng. Fl.* v. p. 344.

On semi-putrid stems of Burdock.

"This species forms whitish spots, $\frac{1}{2}$ -1 in. long by several lines wide. On these spots the little pure white heads are very visible to the naked eye, dispersed in a scattered manner over the surface. The threads are simple, erect, and remotely jointed, dividing at the summit into two, and then subdividing into a number of short attenuated ramuli, covered with a profusion of spores."—*Grev.*

1805. *Penicillium bicolor*. Fr. "Bicoloured *Penicillium*."

Sterile flocci effuse, yellowish, fertile fasciculate, crowded, penicillate above; spores glaucous.—*Fr. S.M.* iii. p. 408. *Berk. Outl.* p. 350. *Pers. Obs.* ii. t. 4, f. 9. *Link. Obs.* i. f. 31.

On decaying substances. Autumn.

Flocci distinctly coloured.

1806. *Penicillium candidum*. Lk. "White *Penicillium*."

Sterile flocci woven together, pure white, fertile threads branched, penicillate; sporidia pure white.—*Berk. Eng. Fl.* v. p. 344. *Fr. S.M.* iii. p. 409.

On various decaying substances. [Mid. Carolina.]

var. β . **coremium.** Subclavate; flocci woven into a stem.—*Coremium candidum*. *Nees.* t. 86.

On decaying substances.

PENICILLIUM ROSEUM. *Link.* is an imperfect condition of *Mucor hyalinus*.

1807. *Penicillium chartarum*. Cooke. "Paper *Penicillium*."

Tufts suborbicular, or irregular, olivaceous; fertile flocci simple or slightly branched below, shortly and dichotomously branched above, with terminal fascicles of oblong moniliform spores; strings of spores simple or branched; pale olive.—*Pop. Sci. Rev.* Jan. 1871, t. 68, f. 4.

On wall paper, in company with *Sporidesmium Alternariæ* (no. 1440).

In some features this much resembles *P. olivaceum*, Corda, but differs in the spores being oblong instead of globose, and in the ramifications of the flocci. It forms more or less orbicular patches of from $\frac{1}{8}$ to $\frac{3}{4}$ in. in diameter, often springing from the same spots, and apparently the same mycelium as *Sporidesmium alternariæ*. (See no. 1440.) (Fig. 270.)

1808. *Penicillium subtile*. Berk. "Minute Penicillium."

Very minute, snow-white; hyphasma creeping, very delicate; fertile flocci erect, simple, or ternate; chains of broadly elliptic spores scanty.—*Berk. Ann. N.H. no. 241, t. 14, f. 25.*

Inside a decayed willow. Spring. Tansor, Norths.

Extremely minute and delicate, presenting to the naked eye nothing more than a white mealy bloom. Fertile threads mostly simple, but sometimes ternate, giving off a few chains of rather large, broadly elliptic spores, each furnished at either end with a little apiculus.—*M.J.B.*

Gen. 236.

OIDIUM, Link.



Fig. 271.

Flocci very short, producing a moniliform string of spores by tomiparous division.—*Berk. Outl. p. 350.* (Fig. 271.)

1809. *Oidium chartarum*. Lk. "Paper Oidium."

Flocci decumbent, somewhat branched, black; articulations oval.—*Link. Sp. 1, p. 124. Berk. Ann. N.H. no. 130.*

On damp paper. King's Cliffe.

This is probably a condition of some higher form of paper mould.

1810. *Oidium aureum*. Lk. "Golden Oidium."

Tufts dense, at first villous, white, at length golden yellow; fertile flocci breaking up into oval joints.—*Berk. Eng. Fl. v. p. 348. Nees. f. 44. Torula aurea, Corda. Ic. t. 8, f. 56. Mucor querneus, Sow. t. 378, f. 12.*

On rotten wood.

[Mid. Carolina.]

The colour of "golden chrome."

1811. *Oidium fulvum*. Lk. "Tawny Oidium."

Tufts dense, at first white and villous, at length tawny; fertile flocci breaking up into oblong-lanceolate joints.—*Berk. Eng. Fl. v. p. 348. Torula fulva, Corda. Ic. t. 8, f. 37. Berk. exs. no. 295.*

On very rotten wood.

"Joints oblongo-lanceolate, the lanceolate form arising from a little truncate sub-cylindric apiculus."—*M.J.B.* (Fig. 271.)

1812. *Oidium fructigenum*. Schrad. "Fruit Oidium."

Tufts subcompact, at first villous, with white branched flocci, then with simple, cream-coloured flocci breaking up into oval, pellucid joints.—*Berk. Eng. Fl.* v. p. 349. *Kunze. Myc. Steft.* t. 2, f. 22. *Torula fructigena*. *Pers. Obs.* t. 1, f. 7. *Corda.* ii. f. 34.

On decayed pears, apples, plums, &c. [United States.]

"There is a distinct hemisphœric black stroma resembling a *Sclerotium*. Cream coloured, greyish or fawn-coloured."—*M. J. B.*

1813. *Oidium fasciculatum*. Berk. "Fasciculate Oidium."

Filaments branched, somewhat fasciculate, erect, forming spreading tufts, white at first, at length of a fine glaucous hue. *Berk. Eng. Fl.* v. p. 349. *Acrosporium fasciculatum*. *Grev. Fl. Ed.* p. 469.

On putrefying oranges.

"Commencing at first in minute, distinct, pulverulent spots, which speedily become confluent and deep glaucous."—*Grev.*

1814. *Oidium porriginis*. Mont. M.S.S. "Porrigo Oidium."

Mycelium flexuous, simple, branched or forked, without septa; spores ovoid, or triangular or quadrilateral, with the angles rounded, variable.—*B. & Br. Ann. N.H.* no. 546. *Achorion Schœnleinii*. *Remate in Robin.* t. 3, f. 10. *Fox, skin diseases* 1863, t. i. f. 1. *Kuchenmeister* t. 3, f. 6.

On *Porrigo lupinosa*.

1815. *Oidium favorum*. B. & Br. "Honey-comb Oidium."

Flocci erect, septate; spores yellow, short, subcylindrical.—*Ann. N.H.* no. 762, t. 16, f. 14.

On honey-comb.

Flocci erect, white, septate, and slightly torulose below; above bearing a few short cylindrical yellow spores. These spores when fallen seem to acquire a septum, and then to be gradually attenuated at either end. A new septum is then formed in either division constituting an irregularly fusiform body.—*B. & Br.*

1816. *Oidium æquivocum*. B. & Br. "Equivocal Oidium."

Tufts inconspicuous to the naked eye; flocci of spores, erect, simple; spores elongated, apiculate at each end, diaphanous, whitish.—*Ann. N.H.* no. 821. *Torula æquivoca*. *Corda.* ii. t. 9. f. 37.

On *Polyporus Schweinitzii*.

**1817. *Oidium concentricum.* B. & Br. "Concentric
Oidium."**

Tufts delicate, maculæform, rounded, scattered, sometimes confluent; flocci erect; spores straight, large, fusiform, greyish-white.—*B. & Br. Ann. N.H. no. 547. Cyindrosporium concentricum. Ung. Exan. t. 2, f. 9. Fusisporium urticæ. Desm. exs. no. 230. Ann. Sc. Nat. (1838), x. p. 309.*

On leaves of various plants.

Variable. In all the forms we believe that the threads protrude through the stomata. Amongst the spores some occur which are large and unisepate. It is possible that after the spores fall they may increase in size.—*B. & Br.*

OIDIUM MONILIOIDES. Lk. See Erysiphe graminis.

OIDIUM TUCKERI. B. Gard. Chron. 1847, p. 779. Ann. N.H. no. 544.

OIDIUM ABORTIFACIENS. B. Ann. N.H. no. 545. Ergotetia abortifaciens Quekett. See Claviceps purpurea.

OIDIUM BALSAMII. Mont. B. & Br. Ann. N.H. no. 763. Gard. Chron. Ap. 15, 1854, on Verbascum nigrum and strawberries.

OIDIUM ERYSIPOIDES. Fr.

OIDIUM LEUCOCONIUM. Desm. Berk. exs. no. 100. See Sphaerotheca pannosa.

These are all conidiophorous conditions of other fungi.

Gen. 237.

STYSANUS, Corda.

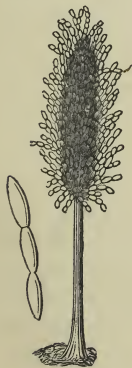


Fig. 272.

Stem erect, carnosocellulose, apex expanded into a hemispherical or cylindrical head; spores simple, apiculate at each end, connate in simple or branched moniliform threads.—*Corda. Icon. i. p. 22.*

(Fig. 272.)

**1818. *Stysanus stemonitis.* Corda.
"Clavate Stysanus."**

Gregarious; stem simple, slender, brown-black, fibrous, ending above in a cylindrical head of spores; threads of spores slightly branched, glaucous; spores oval, concatenate, glaucescent, diaphanous, often with a solitary nucleus.—

Corda. Icon. i. f. 283. Fckl. exs. no. 175. Periconia stemonitis Pers. Syn. t. 3, f. 15.

On rotten sticks, dung, &c.

To the naked eye very like a small *Stemonitis*. The stem is compounded of distinct parallel, septate threads. (Fig. 272.)

Gen. 238.

MONILIA, Hill.

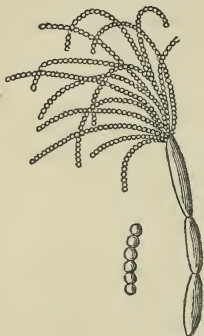


Fig. 273.

On dead grass.

Dark grey, flocci articulate, constricted at the articulations, head drooping in consequence of the weight of the spores.—*Eng. Fl.* (Fig. 273.)

1820. **Monilia racemosa.** *Purt.* "Racemose Monilia."

Flocci cæspitose, branched in a racemose manner; chains of sporidia lateral and terminal, ternate.—*Berk. Eng. Fl.* v. p. 345. *Monilia cæspitosa.* *Purt.* iii. t. 34. *Mucor cæspitosus.* *Bolt.* t. 132, f. 2. *Aspergillus terrestris.* *Mich.* t. 91, f. 4.

On decaying substances.

Gen. 239.

DACTYLUM, Nees.

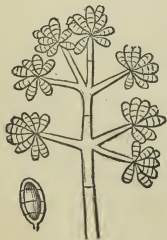


Fig. 274.

Flocci erect, jointed; head none; bearing fasciculate necklaces of spores at their apices.—*Berk. Outl.* p. 351. (Fig. 273.)

1819. **Monilia fasciculata.**

Corda. "Fasciculate Monilia."

Grey, scattered, gregarious, simple; heads of spores lax, somewhat drooping; spores moniliform.—*Berk. Outl.* p. 351. *Briarea elegans.* *Corda.* St. iii. t. 6. *Monilia penicillata.* *Eng. Fl.* v. p. 344. *Grev.* t. 32.

Flocci erect, jointed, branched, bearing at the tips of the branchlets, either scattered or in tufts, septate spores.—*Berk. Outl.* p. 351. (Fig. 274.)

1821. *Dactylium pyriferum.* Fr. "Pear-seeded *Dactylium*."

Flocci aggregate, white, here and there branched; sporidia pyriform, septa evanescent.—*Berk. Eng. Fl.* v. p. 345.

On decaying stems of herbaceous plants.

"Forming little white confluent tufts; flocci very slightly branched; sporidia often lateral, shaped exactly like a grape seed, the upper swollen portion filled with a granulate mass, the lower pellucid, and apparently solid."
M.J.B.

1822. *Dactylium tenellum.* Fr. "Small *Dactylium*."

Flocci aggregate, white, fertile flocci branched, somewhat verticillate; spores quaternate, obovate, septate.—*Fr. S.M.* iii. p. 413. *B. & Br. Ann. N.H.* no. 536.

On moss. March. Dundee.

A small and beautiful species, scarcely visible to the naked eye.

1823. *Dactylium macrosporum.* Fr. "Large-spored *Dactylium*."

Flocci aggregate, white and rose-coloured; branchlets of the fertile flocci very short, sub-verticillate, ending in obovate-cylindric, subternate, now and then septate spores.—*Fr. S.M.* iii. p. 414. *Eng. Fl.* v. p. 345. *Sturm. t.* 50.

On the ground, amongst moss, &c. [Low. & Mid. Carolina.]

1824. *Dactylium sphærocephalum.* Berk. "Round-headed *Dactylium*."

White; hyphasma thin, decumbent; fertile flocci erect, more or less ternate above, heads subglobose, 10-12 spored; spores oblong, very shortly pedicellate, 3-septate.—*Ann. N.H.* no. 243. t. 14, f. 27.

On dead twigs of ivy. Lambley, Norths.

Forming a thin white stratum, with the heads visible to the naked eye; hyphasma decumbent, branched, articulated; fertile flocci erect, articulated, naked below, above branched in a more or less ternate manner; branchlets slightly swollen at the base, attenuated above; spores forming subglobose heads, attached by very short peduncles, oblong-elliptic, triseptate. White in every stage of growth, by which it is distinguished, and by the large heads of distinctly septate spores.—*M.J.B.* (*Fig.* 274.)

1825. *Dactylium dendroides.* Fr. "Tree-like *Dactylium*."

Flocci aggregate, very much branched, white, branchlets racemose; spores terminal, obovate-cylindrical, septate.—*Fr. S.M.*

iii. p. 414. *Eng. Fl.* v. p. 345. *Quekett Journ.* 1870, t. 4. *Tul. Carp.* iii. t. 5, f. 1-15. *Mucor dendroides*, *Bull.* t. 504, f. 9.

On agarics. Common. [Mid. Carolina.]

The sporidia are very rarely septate.—*M.J.B.*

Tulasne records this as a state of *Hypomyces rosellus*.

1826. *Dactylium obovatum*. Berk. "Obovate *Dactylium*."

White, pulvinate; flocci very slender, simple; spores obovate, apical, often binate, uniseptate.—*Ann. N.H.* no. 242, t. 14, f. 26.

On willow twigs. King's Cliffe.

Forming minute white tufts, springing up about the ostiola of some *Sphaeria*. Flocci erect, simple, not articulated, bearing at their apices one or two broadly obovate uniseptate, shortly pedicellate spores. It differs from *D. roseum* in its spores not being constricted, and the absence of any tint of rose-colour.—*M.J.B.*

1827. *Dactylium roseum*. Berk. "Rosy *Dactylium*."

Flocci branched, cæspitoso-intricate, covering the rose coloured, oblong, uniseptate spores.—*Ann. N.H.* no. 242. *Trichothecium roseum*, *Fr. S.M.* iii. p. 427. *Grev.* t. 172. *Eng. Fl.* v. p. 348. *Berk. exs.* no. 99. *Cooke exs.* no. 354.

On decaying plants. Common. [United States.]

DACTYLIUM TENUISSIMUM. *Berk. Trans. Hort. Soc.* i. t. 4, f. 20, 21. *Ann. N.H.* no. 537. Undoubtedly a state of *Fusarium Solani-tuberosi*. *Desm.*

Gen. 240.

CYLINDRIUM, Bonorden.

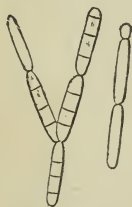


Fig. 275.

Flocci rudimentary, supporting monili-form threads, which are sometimes forked, breaking up into septate spores.—*Bon. Myc.* p. 34.

This genus differs from *Oidium* in the septate spores. (Fig. 275.)

1828. *Cylindrium septatum*. Bon. "Septate *Cylindrium*."

Effused, white; spores attached end to end, and sometimes forked, cylindrical, obtuse, hyaline, triseptate.—*Bonorden Myc. f.* 16. *B. & Br. Ann. N.H.* no. 954.

On decayed wood.

Forming a white bloom on the matrix.

(Fig. 275.)

Gen. 241.

FUSIDIUM, Link.

Fig. 276.

Flocci coloured, very delicate, evanescent; spores straight, fusiform.—*Berk. Outl. p. 351.*
(*Fig. 276.*)

1829. Fusidium griseum. Lk. "Grey Fusidium."

Spot-like; flocci very delicate, evanescent; spores fusiform, straight, greyish-white.—*Sturm. t. 17. Grev. t. 102, f. 1. Cooke exs. no. 198. Fusisporium griseum. Berk. exs. no. 321. Fr. S.M. iii. p. 447. Eng. Fl. v. p. 352.*

On dead leaves. Common.

1830. Fusidium flavo-virens. Fr. "Yellow Fusidium."

Spot-like; flocci very delicate, evanescent; spores aggregate, fusiform, straight, yellow-green.—*Ditm. Sturm. t. 18. Grev. t. 102, f. 2. Cooke exs. no. 245. Fusisporium flavo-virens, Fr. S.M. iii. p. 446. Eng. Fl. v. p. 351. Berk. exs. no. 213.*

On dead leaves. Common.

1831. Fusidium album. Desm. "White Fusidium."

Tufts small, scattered, white, sometimes confluent; flocci few, evanescent; spores ellipsoid or fusiform, minute, white.—*Desm. Ann. Sc. Nat. 1838, x. p. 309. Desm. exs. no. 229. Moug. exs. no. 894. Ann. N.H. no. 248.*

On dry, green leaves of oak. Melton, Norths. Shere, Surrey.

Gen. 242.

SPOROTRICHUM, Link.

Fig. 277.

Flocci ascending, tufted, septate; spores simple, scattered, at first concealed.—*Berk. Outl. p. 352.*
(*Fig. 277.*)

It may be doubted whether there are any genuine species of this genus, whose characters are very uncertain. They are mostly conidiiferous states of other plants.—*M.J.B.*

- 1832. *Sporotrichum chlorinum.* Lk.** "Yellow-green *Sporotrichum.*"

Erect, intricate; flocci dense, very soft, simple and branched; spores heaped together, globose, yellow-green.—*Link. Sp. i. p. 17. Fr. S.M. iii. p. 421. Eng. Fl. v. p. 346.*

On dry leaves. Glasgow.

- 1833. *Sporotrichum aurantiacum.* Grev.** "Orange *Sporotrichum.*"

Tufts of a reddish orange, filaments very slender, much entangled; spores globose, extremely minute.—*Grev. Wern. Trans. iv. t. 5, f. 4. Eng. Fl. v. p. 347.*

On dung, &c.

"Tufted, of a beautiful orange colour, which acquires a reddish tinge with age. Tufts generally about a line in breadth, but sometimes almost confluent. Threads very fine and much entangled."—*Grev.*

- 1834. *Sporotrichum sulphureum.* Grev.** "Sulphury *Sporotrichum.*"

Flocci forming minute tufts, at length evanescent; spores minute, globose, heaped together, sulphur-yellow.—*Grev. t. 108, f. 2. Wern. Trans. iv. f. 3. Eng. Fl. v. p. 347. Fr. S.M. iii. p. 423. Berk. exs. no. 211.*

In cellars, on corks, &c. Common. [Mid. Carolina.]

"Tufted, roundish, of a pleasant yellow-colour, varying in shade according to age. Tufts $\frac{1}{2}$ -2 lines in breadth. Threads remotely jointed, loosely interwoven, and occasionally branched."—*Grev. (Fig. 277.)*

- 1835. *Sporotrichum laxum.* Link.** "Lax *Sporotrichum.*"

Very delicate, lax; flocci few, white, as well as the oval spores.—*Link. Sp. 1, p. 1. Nees. f. 45. Eng. Fl. v. p. 347. S. minutum. Grev. t. 108, f. 1. Wern. Trans. iv. f. i.*

On various substances. Common. Easily recognised by its oval spores.

"Small, very white, tufted, sometimes crowded together. Tufts about $\frac{1}{2}$ line in diameter. Threads under the microscope loosely interwoven, seldom and irregularly branched, and somewhat attenuated."—*Grev.*

- 1836. *Sporotrichum inosculans.* Berk.** "Dark *Sporotrichum.*"

Effuse, dark umber-brown, forming a velvety crust; flocci erect, virgate; spores minute, elliptic.—*Eng. Fl. v. p. 346.*

On *Thelephora*. Appin.

SPOROTRICHUM GEOCHROUM. *Eng. Fl.* v. p. 346, is the conidiiferous condition of some *Hypoxydon*.—*M.J.B.*

1837. *Sporotrichum fenestrale.* *Ditm.* "Window-glass *Sporotrichum.*"

Tufted, very minute; flocci much branched, centrifugal, decumbent, septate, whitish; spores globose, dingy.—*Ditm. Sturm.* iii. t. 1.

On glass. Common.

Gen. **243.**

ZYGODESMUS, Corda.



Fig. 278.

1838. *Zygodesmus fuscus.* *Corda.* "Brown *Zygodesmus.*"

Crustaceous, effused, velvety, brown; flocci branched, septate, clear brown, sporidiferous, ramuli erect, short; spores globose, aculeate, yellow-brown.—*Corda.* iv. f. 81. *Curr. Micr. Journ.* v. p. 127, t. viii. f. 41.

On decayed wood and fallen branches. [United States.]

Easily recognised by the reddish-brown color of the filaments, and by the echinulate spores.—*Curr.*

Gen. **244.**

VIRGARIA, Nees.



Flocci erect, dichotomous, virgate, black, septate; spores minute, scattered over the branches.—*Berk. Outl.* p. 352.

(*Fig.* 279.)

1839. *Virgaria nigra.* *Fr.* "Black *Virgaria.*"

Flocci erect, dichotomously virgate, black, attenuated at their apices; spores globose, of the same colour.—*Nees.* f. 52. *Sporotrichum nigrum*, *Eng. Fl.* v. p. 346. *Botrytis nigra*, *Grev.* t. 274.

On dead trunks, &c.

(*Fig.* 279.)

Fig. 279.

Gen. 245.

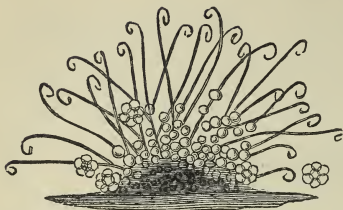
BOLACOTRICA, B. & Br.

Fig. 280.

Floci unbranched, jointed, curled at the top; spores large, globose, shortly pedicellate, conglomerated towards their base.—*Berk. Outl.* p. 353. *Ann. N.H.* no. 506. (Fig. 280.)

1840. Bolacotricha grisea. B. & Br. "Grey Bolacotricha."

Effused, grey; floci thicker below, flexuous, tips curved, irregularly articulated; spores conglomerate, globose.—*Ann. N.H.* no. 506, t. 5, f. 4.

On dead cabbage stalks, &c.

Tufts resembling strongly those of *Myxotrichum chartarum*, but rather larger, forming large effused, grey patches; threads thicker at the base, flexuous, pale purple under the microscope, strongly curved at the tips like little tendrils, sparingly articulate at irregular distances, or perfectly continuous; spores conglomerate, large, 5-8 times as broad as the threads, globose; episporium thin; endochrome strongly granulated. (Fig. 280.)

Gen. 246.

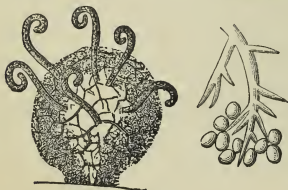
MYXOTRICHUM, Kunze.

Fig. 281.

Floci branched, bearing towards their base little conglomerated masses of spores.—*Berk. Outl.* p. 353.

(Fig. 281.)

1841. Myxotrichum chartarum. Kze. "Paper Myxotrichum."

Forming little patches, dark grey, globose; floci cæspitose, decumbent, divaricately branched, erect, emergent, uncinatate at the apex; spores in clusters at the tips of the branches, subglobose, at first concatenate.—*Kunze M.H.* ii. p. 110, t. 2, f. 1. *B. & Br. Ann. N.H.* no. 121. *Berk. exs.* no. 207. *Corda.* vi. f. 23. *Sturm.* vi. t. 40.

On straw, &c.

(Fig. 281.)

1842. *Myxotrichum deflexum*. Berk. "Deflexed Myxotrichum."

Forming little patches, consisting of grey downy balls; flocci radiating, branched; branches opposite, deflexed, attenuated upwards; branchlets few, short, acute; spores basal, in patches, oblong-elliptic.—*Ann. N.H. no. 122, t. 8, f. 9.*

On damp paper and wood.

Forming little patches, consisting of little grey downy balls; from these arise a number of radiating threads, furnished with a few opposite deflexed branches, which decrease in size from the base upwards, so as to give the appearance of a little grove of larches. The branches have occasionally a few short acute branchlets, which are often alternate; spores collected in patches about the base of the threads, oblong-elliptic. Distinguished from *M. chartarum* by the absence of the curved apices of the flocci, by the rectangular and deflexed branches, and by the main threads being generally simple, or if branched not trifid or subcymose.

Gen. 247. GONYTRICHUM, Nees.



Fig. 282.

Flocci branched, here and there bearing knots, from which spring the verticillate, fertile, septate threads, crowned at their tips with a globose mass of spores.—*Berk. Outl. p. 353.* (*Fig. 282.*)

1843. *Gonytrichum cæsium*. Nees. "Grey Gonytrichum."

Flocci tufted, intricate, bluish-grey, nodose at the joints, from which spring the branches and branchlets; spores conglomerated, globose, pellucid.—*Nees. Nov. A.N.C. ix. p. 244, f. 14. Corda. ii. f. 51. Myxotrichum cæsium. Fr. S.M. iii. p. 348. Eng. Fl. v. p. 335.*

On fallen branches. Apethorpe, &c.

Forming dense greyish tufts, at length black, consisting of very much branched fibres; branches patent, nodose at their origin, and there furnished with numerous globose spores.—*M. J. B.*

1844. *Gonytrichum fuscum*. Corda. "Brown Gonytrichum."

Tufts pulvinate, brown; flocci fragile, blackish-brown, opaque; branches subulate; spores scattered, white, globose.—*Corda. i. f. 160. Cooke exs. no. 348. B. & Br. Ann. N.H. no. 1054.*

On rotten sticks. Aug.

(*Fig. 282.*)

Gen. 248.

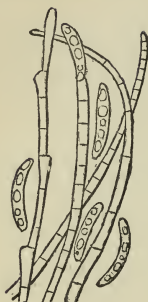
MENISPORA, Pers.

Fig. 283.

white.—*Corda. i. t. 4, f. 223. B. & Br. Ann. N.H. no. 530.*

On decayed wood. Jan. Lambley, Notts. (Fig. 283.)

1846. Menispora ciliata. Corda. "Fringed Menispora."

Tufts somewhat effused, olivaceous, tomentose; flocci erect, dichotomous, lax, irregularly septate, sometimes incurved, olive-brown, pellucid; spores fusiform, colourless, furnished at each extremity with a long slender cilium.—*Corda. i. f. 222. Rabh. F.E. no. 881.*

On sticks. Dec. Jan. Batheaston.

Gen. 249.

CHÆTOPSIS, Grev.

Fig. 284.

Flocci erect, jointed, subulate, below branched and verticillate, above simple and flagelliform; spores cylindrical, springing from the tips of the branchlets.—*Berk. Outl. p. 353.*

(Fig. 284.)

1847. Chætopsis Wauchii. Grev. "Wauch's Chætopsis."

Flocci aggregate, brown-black, quite simple, above; spores oblong-cylindrical, grey; conglomerated just above the base upon very short

branchlets.—*Grev. t.* 236. *Corda. i. f.* 242. *Dematium griseum.*
Pers. M.E. i. p. 15. *Eng. Fl. v. p.* 337. *Fr. S.M. iii. p.* 364.

On decayed wood.

Easily recognised by the greyish cylindrical masses of spores, just above the base of the threads; spores sometimes six times as long as broad, and very slightly, but decidedly curved with a round, pellucid globule in the centre; branchlets very obscure, if not altogether wanting; several flocci frequently pass through the same heap of spores. (Fig. 284.)

Gen. 250.

ACREMONIUM, Link.

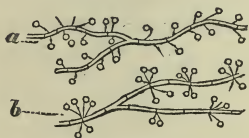


Fig. 285.

Flocci creeping, jointed, beset with short patent branches, each of which bears a spore.—*Berk. Outl. p.* 353.

(Fig. 285.)

1848. *Acremonium verticillatum.* Lk. “Verticillate *Acremonium.*”

White; fertile branchlets whorled; spores ovate.—*Link. Sp. i. p.* 44. *Grev. t.* 124, f. 2. *Fr. S.M. iii. p.* 425. *Eng. Fl. v. p.* 347.

On dead wood and trunks. Spring. Edinburgh.

(Fig. 285, b. magnified.)

1849. *Acremonium alternatum.* Lk. “Alternate *Acremonium.*”

White; fertile branchlets alternate; spores globose.—*Link. Sp. i. p.* 74. *Sturm. t.* 2. *Eng. Fl. v. p.* 347. *Fr. S.M. iii. p.* 425.

On decaying leaves. Autumn. Stibbington, Hunts.

(Fig. 285, a. magnified.)

1850. *Acremonium fuscum.* Schm. “Brown *Acremonium.*”

Olive-brown, fertile branchlets opposite or alternate; spores globose.—*Schmidt. M.H., i. t.* 2, f. 23. *Grev. t.* 124, f. 1. *Eng. Fl. v. p.* 347.

On dead wood and sticks. Autumn. Near Edinburgh.

Gen. 251.

GONATOBOTRYS, Corda.

Flocci erect, jointed; articulations swollen in the middle, and bearing obovate spores on little spicules.—*Berk. Outl.* p. 354.

(*Fig. 286.*)

1851. Gonatobotrys simplex. Corda.

"Simple Gonatobotrys."

White; tufts lax, minute, arachnoid; flocci simple, long, straight, erect, then nodding; heaps of spores globose; spores ovate, apiculate at the base.—*Corda. Muced. t. 5. Berk. Outl.* p. 354.

On fruit of *Tamus*, &c. (*Fig. 286.*)

Fig. 286.

Gen. 252.

CLONOSTACHYS, Corda.

Flocci jointed above; branches and branchlets quaternate, subcapitate, clothed with spores, forming distinct spikes.—*Berk. Outl.* p. 354.

(*Fig. 287.*)

1852. Clonostachys araucaria. Corda.

"Compact Clonostachys."

White, arachnoid; branches fastigiate; spikes cylindrical; spores oblong, obtuse, white.—*Corda. Muced. t. 15. Curr. Micr. Journ. v. p. 126. Stachylidium araucarium, Bon. Handb. t. vii. f. 155.*

On bark of small twigs.

Remarkable for the peculiar arrangement of the spores, which form long dense spikes like ears of corn.—*Curr.*

(*Fig. 287.*)

Fig. 287.

Gen. 253.

BOTRYOSPORIUM, Corda.

Flocci slightly branched, bearing patent branchlets, each of which is surmounted by a few spicules, bearing a head of spores.—*Berk. Outl. p. 354. (Fig. 288.)*

1853. Botryosporium pulchrum. Corda.
 “Beautiful Botryosporium.”

Tufts broadly expanded, lax, white, farinose; flocci simple or dichotomous, lax; racemes very long, subcylindrical; heads of spores globose, quinate; spores ovate, colourless.—*Corda. Muced. t. 19. Curr. Micr. Journ. v. p. 117. Cooke exs. no. 353.*



Fig. 288.

On herbaceous plants. Oct.

Forms large white mealy patches. The flocci are very delicate, forming a woolly looking mass, and the spores are arranged in four or five compact globular masses at the extremities of short ramuli, which are alternate upon the main threads.—*Curr. (Fig. 288.)*

1854. Botryosporium diffusum. Corda. “Diffuse Botryosporium.”

Fertile flocci branched, white; fertile branchlets scattered, bearing quaternate spores; spores at length collected at their apices in globular masses.—*Corda. Sturm. t. 5. Stachylidium diffusum, Fr. S.M. iii. p. 392. Eng. Fl. v. p. 341. Botrytis diffusa, Grev. t. 126, f. 2. Wern. Tr. p. 72, f. 7.*

On decayed herbaceous plants, especially potatoes.

Forming loose tufts, 3-4 lines high; branchlets at first bearing quaternate spores; they are usually crowned with globular masses of globose, or sometimes elliptic spores.—*M.J.B.*

Gen. 254.

PAPULASPORA, Preuss.

Fig. 289.

Flocci decumbent, jointed, producing short erect branches, each of which produces a cellular head studded with erect spores, the endochrome of which is bipartite or quadripartite.—*Berk. Outl. p. 354. (Fig. 289.)*

1855. Papulaspora sepedonioides. *Preuss.* "Red-headed Papulaspora."

Hyphasma effused, creeping, branched, septate, pellucid, woolly, interwoven; ramuli pedicelliform, ascending, septate, terminating in a globose red cellular body, studded with oblong spores.—*Sturm.* vi. t. 45. *Ann. N.H.* no. 761*.

On rice paste. Aug. King's Cliffe.

This beautiful mould consists of decumbent, articulate, colourless threads, which produce short, erect branches, each surmounted by a large red cellular body about '0018 in. in diameter. The heads studded with oblong erect spores '0004-'0006 in. long, with their endochrome bipartite. If these are truly spores, each individual head presents nearly the structure of an *Epicoccum*.—*B. & Br.* (*Fig.* 289.)

Gen. 255.

RHOPALOMYCES, Corda.



Fig. 290.

Flocci free, septate, swelling at the tip into an areolate head, each cell of which bears a spicule, surmounted by a spore.—*Berk. Outl.* p. 354.

(*Fig.* 290.)

1856. Rhopalomyces pallidus.

B. & Br. "Pallid Rhopalomyces."

Pale fawn colour; fertile flocci furcate, flexuous; spores minute, elliptic. *B. & Br. Ann. N.H.* no. 504, t. 5, f. 2.

On decayed Russian matting. Feb. King's Cliffe.

Creeping widely over the matrix, on which it forms a mealy pale fawn-coloured ragged stratum; hyphasma delicate, consisting of very fine threads, which produce little branches, swelling out suddenly, and rising at once, or creeping along and giving off fertile flocci. These are rather thick, irregular in outline, once or twice forked; heads globose, or nearly so, beautifully areolate, each areola producing in its centre a short delicate spicule, surmounted with a minute elliptic spore.—*B. & Br.*

1857. Rhopalomyces candidus. *B. & Br.* "White Rhopalomyces."

White; hyphasma very sparing; fertile flocci straight, simple; heads subglobose; spores minute, elliptic.—*Ann. N.H.* no. 505, t. 5, f. 3.

On a mixture of dung, earth and hops. Feb. King's Cliffe.

Extremely minute and delicate, pure white; hyphasma creeping, but very sparing; fertile flocci erect, even; heads globose or somewhat obovate, beautifully areolate; spores minute, elliptic. Differing from *R. pallidus* in colour, and the simple straight flocci; the heads are somewhat larger.—*B. & Br.* (*Fig.* 290.)

Order XXII. SEPEDONIEI.

Mycelium floccose; fertile flocci obscure, and in consequence the spores rest upon the matrix.

The spores are the principal element in this order, which approaches *Coniomycetes*.

Spores large, globose	<i>Sepedonium</i> .
Spores fusiform, curved, then septate—	
Forming a gelatinous mass	<i>Fusisporium</i> .
Spores septate—	
Apparently attached to the matrix .	<i>Epochnum</i> .
Spores simple—	
At first covered by persistent flocci .	<i>Psilonia</i> .

Gen. 256.

SEPEDONIUM, Link.

Fig. 291.

Spores large, simple and globose, or appendiculate.—*Berk Outl.* p. 355.
(Fig. 291.)

1858.

Sepedonium chrysospermum. *Lk.* "Yellow Sepedonium."

Flocci fleecy, dense, white; spores golden yellow, not appendiculate.—*Fr. S.M.* iii. p. 438. *Eng. Fl.* v. p. 350. *Bull. t.* 504, f. 1, t. 476, f. 4. *Sow. t.* 378, f. 13. *Nees. f.* 38. *Grev. t.* 198. *Chev. t.* 3 f. 16. *Kunze. exs. no.* 223. *Bisch. f.* 3806. *Bon. t.* 4, f. 103. *Fekl. exs. no.* 141.

On decaying fungi. Common.

[United States.]

Frequently penetrating the whole fungus, and converting it into yellow dust; spores globose, echinulate. Tulasne regards this as the conidioid condition of a *Sphaeria* (*Hypomyces*), not yet recorded in Britain (*Tul. Carp.* iii. p. 49).
(Fig. 291.)

1859. *Sepedonium roseum*. Fr. "Rosy Sepedonium."

Flocci fleecy, white; spores appendiculate, red.—*Fr. S.M.* iii. p. 438. *Eng. Fl.* v. p. 350. *Ann. N.H.* no. 132. *Tul. Carp.* iii. p. 44.

On decaying fungi.

More superficial than *S. chrysospermum*. Spores larger, globose, with a broad pellucid border, and a thick blunt appendage. Tulasne states that this constitutes the conidia of *Hypomyces Linkii*, the perfect condition of which has not yet been found in Britain.

Gen. 257.**FUSISPORIUM, Link.**

Fig. 292.

Spores elongated, fusiform, curved, at length septate, forming a gelatinous mass.—*Berk. Outl.* p. 355. (*Fig.* 292.)

**1860. *Fusisporium betæ*.
Desm. "Beet Fusisporium."**

Orange, effused in a tremellose crust; flocci dense, branched, scarcely septate; spores very copious, fusiform, delicate, slightly curved, obscurely septate.—*Ann. Sc. Nat.* xix. t. 18, f. 2. *Berk. Ann. N.H.* no. 246. *Desm. exs.* no. 305. *Bon.* t. 12, f. 248. *Fckl. exs.* no. 214.

On decaying beet root. Apethorpe.

1861. *Fusisporium georginæ*. Berk. "Dahlia Fusisporium."

Effused, gelatinous, reddish, roseate, or intense orange, thick; spores fusiform, acute at each extremity, with several oil globules.—*Klotsch. exs.* no. 186. *Berk. Ann. N.H.* no. 247. *F. rhizophilum*. *Corda.* ii. f. 15.

On roots of Dahlia. Apethorpe.

Doubtfully distinct from *F. betæ*.—*Desm.*

1862. *Fusisporium udum*. Berk. "Moist Fusisporium."

Broadly effused, tremelloid; dirty orange; flocci of the hyphasma decumbent, slightly branched; spores long, curved, 3-5 septate, acute at either end.—*Ann. N.H.* no. 245, t. 14, f. 28.

On trees in spring.

Forming a broad tremelloid mass, wet with the overflowing sap, composed of slightly branched decumbent filaments, some of which are closely septate, others contain a series of globose nuclei, while others are quite simple; spores 3-5 septate, elongated, curved, acute at either end, the contents of the articulations orange. In age the septa are absorbed, and there is a row of irregular nuclei.—*M. J. B.*

1863. *Fusisporium roseolum.* Steph. "Potato Fusisporium."

Rose-red; flocci short; spores curved, elongated, 3-6 septate.—*Berk. Ann. N.H. no. 549.*

On decayed potatoes. Bristol.

Of a delicate rose-red, forming thin floccose patches; fertile threads short; spores curved, elongated, slightly obtuse, 3-6 septate, often slightly projecting at each dissepiment. It approaches *Dactylium*, but the spores are those of *Fusisporium*.—*M. J. B.*

1864. *Fusisporium fæni.* B. & Br. "Hay Fusisporium."

Hyphasma sparing, fertile flocci very short; spores oblong, straight, obtuse, 1-2 septate.—*Ann. N.H. no. 550.*

On hay. Dec. Apethorpe.

Orange-red, spreading in wide patches many feet in width; hyphasma creeping, sparingly articulate; fertile flocci very short; spores oblong, obtuse at either extremity, 1-2 septate. Differing from all other species in the character of the spores.—*M. J. B.*

1865. *Fusisporium bacilligerum.* B. & Br. "Long-spored Fusisporium."

Greyish white; hyphasma obsolete; spores very long, 5-7 septate, attenuated below, apex sub-clavate.—*Ann. N.H. no. 548. Rabh. F.E. no. 177.*

On leaves of *Alaternus*. West of England.

Occupying the centre of little brown spots; hyphasma obsolete; spores very long, hyaline, 5-7 septate, strongly attenuated below, obtuse, and slightly clavæform above, somewhat curved.—*M. J. B.*

1866. *Fusisporium atrovirens.* Berk. "Green-black Fusisporium."

Flocci effused, white; spores at first greyish-green, then green-black, strongly curved.—*Eng. Fl. v. p. 351.*

On onions. Summer. King's Cliffe.

Spores forming about the third of a circle, originating in little dot-like spots, with radiating flocci, crowned with a gelatinous greyish mass; these at length unite, and the whole of the centre is occupied by the spores, the border still increasing and quite fleecy, if meeting with any impediment; at length the whole is green-black, and the border obliterated. One cause of the mildew of onions.—*M. J. B.*

- 1867. *Fusisporium aurantiacum.* Lk.** "Orange Fusisporium."

Flocci fleecy, white, at length evanescent; spores conglutinate, slender, slightly curved.—*Link. Sp. i. p. 30. Fr. S.M. iii. p. 445. Eng. Fl. v. p. 351. Nees. f. 40 B. Desm. exs. no. 664. Ung. Exan. t. 2, f. 13. Bisch. f. 3804.*

On decayed gourds, &c.

[Low. Carolina.]

At first clothed with fleecy white, branched flocci, which spread beyond the mass of the spores, and at length vanish, leaving a tremelloid stratum; spores septate, septa evanescent. Sometimes commences in little dot-like gelatinous masses, which at length become confluent, without any mycelium. *M. J. B.*

- 1868. *Fusisporium incarcerationans.* Berk.** "Enclosed Fusisporium."

Pale rose, nestling in the sporangium or peristome of mosses; spores arcuate, slender, triseptate.—*Berk. Intell. Obs. 1863, p. 11, f. 4.*

On peristomes or in capsules of *Orthotrichum*.

The characters of this little parasite are not striking, and its specific distinction must rest partly on its peculiar habits, for the spores scarcely differ from those of one or two other species, they are about $\frac{1}{418}$ in. long, but by no means uniform in size.—*M. J. B.*

- 1869. *Fusisporium (?) insidiosum.* Berk.** "Beaded Fusisporium."

White, mycelium creeping, producing subglobose tufts of short necklace-like simple or branched threads, each terminal joint of which bears a curved, fusiform, apiculate, 1-5 septate spore.—*Gard. Chron. 1860, p. 480, with a fig.*

On *Agrostis pulchella*.

"This species has threads very like those of *Aegerita*." Spores ($\cdot 002$ in.) $\cdot 05$ m.m. long. Tufts very minute, scarcely visible without a lens.
(*Fig. 292, tuft magnified.*)

- 1870. *Fusisporium solani.* Mart.** "Woolly Fusisporium."

Rounded, irregular, tomentose, white; flocci branched; spores fusiform, curved, triseptate.—*Mart. Kart. Epid. t. iii. f. 25, 30. Periola tomentosa. Fr. S.M. ii. p. 267. Eng. Fl. v. p. 226.*

On potatoes.

The flocci are too much developed to be consistent with the characters of this order.

Gen. 258.

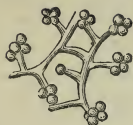
EPOCHNIUM, Link.

Fig. 293.

Sterile flocci creeping, fertile obsolete ; spores septate, attached apparently to the matrix.—*Berk. Outl. p. 356.*

(Fig. 293.)

1871. Epochnium macrosporoideum. *Berk.* "Radiating Epochnium."

Flocci very slender, effused, irregularly branched ; spores subglobose or oval, divided by radiating septa.—*Berk. Ann. N.H. no. 131. t. 8, f. 14.*

On dead twigs of *Ribes*. Aug. King's Cliffe.

Forming a thin slate-black stratum ; flocci transparent, perfectly colourless under the microscope, apparently not septate, very slender, effused, irregularly branched, often anastomosing at right angles. From the tips or on very short lateral branches spring subglobose or oval colourless transparent vesicles, with a central nucleus ; these by degrees are furnished within with obscure septa, at length they acquire when full grown a brown hue, and are from $\frac{1}{1500}$ to $\frac{1}{2000}$ in. in diameter. They are then in general more or less globose, divided by septa into a few lobes, which are disposed in a radiating manner, like the berries of a mulberry. A few are furnished with a little apicular peduncle, but the greater part lose all trace of the point of attachment.—*M. J. B.*

Gen. 259.

PSILONIA, Fr.

Fig. 294.

Flocci persistent, joined into an erumpent mass, at first covering the simple spores.—*Berk. Outl. p. 356. Eng. Fl. v. p. 352.*

(Fig. 294.)

1872. Psilonia gilva. *Fr.* "Reddish-grey Psilonia."

Tufts subrotund, compact, reddish-grey, inclining to brown ; flocci intricate, twisted, mostly simple, covering the variously shaped spores.—*Fr. S.M. iii. p. 451. Eng. Fl. v. p. 353. Berk. exs. no. 101.*

On dead herbaceous stems ("felled oak.")—*Eng. Fl.*

Masses 1-2 lines broad, subinnate ; flocci very fine, curiously twisted together, external surface, finely tomentose, from their free apices. Spores fusiform (sometimes globose or oval), collected about the apices of the filaments.—*M. J. B.*

1873. *Psilonia arundinis.* *Desm.* "Reed Pselonia."

Tufts oblong, dense, pale rose-coloured ; flocci fasciculate, intricate, simple ; spores ovoid and oblong.—*Fr. S.M.* iii. p. 451. *Berk. exs. no.* 102. *Berk. Ann. N.H.* no. 35-551. *Desm. exs. no.* 460. *Ann. Sc. Nat.* 1830, t. 5, f. 1. *Chloridium festucae.* *Corda. Anl. t. B. f.* 12, no. 4.

On dead leaves and stems of reeds and *Carices.* Feb.

Tufts evidently erumpent, oblong, linear, 1-2 lines long.

PSILONIA NIVEA, *Fr.* is clearly an insect production.

1874. *Psilonia discoidea.* *B. & Br.* "Discoid Pselonia."

Pale fawn-colour, then brown ; disc proliferous ; spores oblong, margin discrete, rosy tan-colour.—*B. & Br. Ann. N.H.* 1866, no. 1150, t. 3, f. 8.

On rotten rails. Jan.—Feb. Wilts.

Whole plant 1-2 lines across, variously shaped, orbicular, elongated, flexuous, &c. In the early stage the disc is quite covered by the shaggy coat, which afterwards folds back or cracks, and leaves the stratum of spores naked, precisely as in *Myrothecium*. Spores oblong or, seen laterally, sub-cymbiform, (.00035 in.) .009 m.m. long.—*B. & Br.*

Order XXII. TRICHODERMACEI.

Flocci covering the spores, and forming a kind of peridium, which at length vanishes in the centre.—*Berk. Outl. p. 356.*

Peridium more or less distinct—

Stipitate.

Spores on the threads *Pilacre.*

Sessile.

Spores in cavities *Institale.*

Peridium spurious, indeterminate—

Flocci even.

Spores spread over the disc. . . *Trichoderma.*

Flocci constricted.

Spores collected in the centre . . *Arthroderma.*

Gen. 260.

PILACRE, Fr.



Stem solid, cylindrical; head globose, composed of flexuous, branched, radiating threads; spores produced near the tips, forming a dusty mass.—*Berk. Outl. p. 356.* (Fig. 295.)

1875. Pilacre faginea. B. & Br. "Beech Pilacre."

Stem blackish, pruinose; head subglobose; spores broadly elliptic.—*Ann. N.H. no. 380, t. 11, f. 5. Onygena faginea, Fr. S.M. iii. p. 209. Kl. exs. no. 1724. Fckl. exs. no. 1073.*

On beech sticks. Aug. Spye Park, Wilts. [United States.]

Fig. 295.

About 2 lines high; stem $1\frac{1}{2}$ line high, pruinose, at length brown or blackish; head subglobose or turbinate, at first pruinose, umbilicate, or without trace of umbilicus; flocci branched, especially above, somewhat fastigate, more or less flexuous; spores minute; broadly elliptic, with a distinct nucleus.—*M.J.B.*

1876. Pilacre Petersii. B. & Curt. "Hornbeam Pilacre."

Stem short, white; head large; flocci nearly straight.—*Ann. N.H. no. 824. Curt. exs. no. 3811.*

On hornbeam. Hainault Forest. [Alabama, U.S.]

Stem 2 lines high, white; head 1-2 lines or more across, threads anastomosing, far less flexuous than in *P. faginea*. Spores snuff-coloured, about (.0002 in.) .005 m.m across. When fresh it has a smell like that of some *Hypericum*. In habit the species resembles a little *Nyctalis*.—*B. & Br.*

Gen. 261.

INSTITALE, Fr.

Stem none ; common mass containing many cavities filled with spores.—*Berk. Outl.* p. 357.

INSTITALE EFFUSA, *Fr. S.V.S.* p. 447. *B. & Br. Ann. N.H.* no. 756. See *Ptychogaster albus*. *Corda. ante.* no. 1104.

TRICHODERMA VIRIDE, *Pers. Grev. t.* 271. This is a state of *Hypocrea rufa*, Fr.

Gen. 262.

ARTHRODERMA, Currey.

Peridium spurium, indeterminate, roundish, composed of interwoven, strongly constricted, jointed flocci. Spores collected in the centre.—*Berk. Outl.* p. 357. (Fig. 296.)

Fig. 296.

1877. Arthroderma Curreyi. *Berk.* "Currey's Arthroderma."

Scattered or gregarious, globose or pulvinate ; flocci branched, jointed, torulose ; spores brilliant yellow, spherical.—*Berk. Outl.* v. 357. *Quart. Micr. Jour.* ii. p. 240, t. ix. f. 6-8.

On dead leaves and sticks.

DIVISION II. **SPORIDIIFERA.** *Sporidia in asci.*

- V. Fertile cells seated on threads, not compacted into a hymenium *Physomycetes.*
 VI. Asci formed from the fertile cells of an hymenium *Ascomycetes.* 641

Family VI. **PHYSOMYCETES.**

Threads free, or only slightly felted, bearing vesicles which contain indefinite sporidia.—*Berk. Outl. p. 406.*

Fertile cells bladder-shaped, scattered on the threads, which are not compacted so as to form a distinct hymenium. Sporidia indefinite, formed from the protoplasm of the cells.—*M.J.B.*

- Threads felted, moniliform—
 Sporangia irregular *Antennariei.*
 Threads free.
 Sporangia terminal or lateral *Mucorini.*

Order XXIII. **ANTENNARIEI.**

Threads black, more or less felted, moniliform and equal in the same felt, bearing here and there irregular sporangia.—*Berk. Outl. p. 406.*

- Threads mostly moniliform—
 Spores concatenate *Antennaria.*
 Threads mycelioid, byssoid—
 Spores simple *Zasmidium.*

Gen. 263.

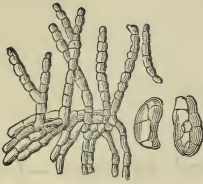
ANTENNARIA, Link.

Fig. 297.

Threads felted, black, articulated, often moniliform; walls of sporangia mostly cellular; spores chained together, immersed in gelatinous pulp. *Berk. Outl.* p. 406. (Fig. 297.)

1878 ***Antennaria semiovata*.** *B. & Br.* "Semi-ovate Antennaria."

Fertile floci erect, short, branched; articulations torulose, even; pycnidia semi-ovate; perithecia curved, acuminate.—*B. & Br. Ann. N.H.* no. 784, t. 16, f. 18.

On fronds of *Lastrea filix-mass.* Sept. Bath.

Clothing the leaves with dense matted felt. Barren threads creeping, often united into an irregular membrane, fertile, erect, generally slightly branched, but sometimes sub-dichotomous. It is difficult to say what is a species in this genus, which appears to present one form of fruit of *Capnodium*.—*B. & Br.*

Gen. 264.

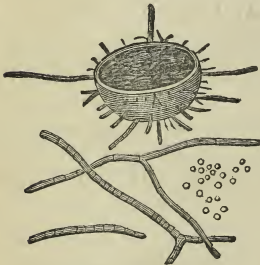
ZASMIDIUM, Fr.

Fig. 298.

Sporangium thin, carbonaceous, but brittle, growing on a septate, byssoid, equal, mycelium. Mouth sub-umbilicate, spores simple.—*Berk. Outl.* p. 406. (Fig. 298.)

1879. ***Zasmidium cellare*.**
Fr. "Cellar Fungus."

Mycelium very thick and abundant, lax, composed of septate floci, olive-black; peridia globose, seated upon the threads.—*Berk. Outl.* p. 407. *Racodium cellare*, *Bisch. f.* 3700. *Fckl. exs.* no. 641. *Eng. Fl.* v. p. 324. *Moug. exs.* no. 790. *Grev. t.* 259. *Antennaria cellaris*, *Fr. S.M.* iii. p. 229. *Fibrillaria vinaria*. *Sow. t.* 432, 387, f. 3. *Dill. t.* 1, f. 12. *Nees. f.* 70. (Fig. 298.)

On corks, bottles, walls, &c., in cellars. Common.

Order XXIV. MUCORINI.

Threads free, bearing terminal or lateral sporangia.—*Berk. Outl. p. 407.*

Sporangia collapsing and dependent	<i>Ascophora.</i>
Sporangia bursting, not dependent	<i>Mucor.</i>
Sporangia at length indurated—	
Ejected	<i>Pilobolus.</i>
Not ejected	<i>Hydrophora.</i>
Sporangia delicate, perforated by the stem—	
Sporidia globose, mixed with radiating threads	<i>Endodromia.</i>
Sporangia splitting horizontally—	
Sporidia growing on the columella	<i>Sporodinia.</i>
Sporangia pierced by the threads; branches verticillate—	
Sporidia on the tips of the threads	<i>Acrostalagmus.</i>
Vesicles of separate branches conjugating—	
Producing a sporangium	<i>Syzygites.</i>
Flocci collected in a spongy globose mass. Hypogæous—	
Vesicles globose	<i>Endogone.</i>

Gen. 265.

ASCOPHORA, Tode.

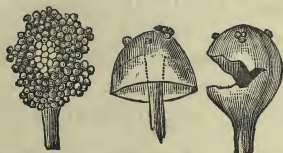


Fig. 299.

Sporangia collapsing, and at length hanging down over the fructifying apices like a hood. Fruit sometimes of two kinds. *Berk Outl. p. 407. (Fig. 299.)*

1880. *Ascophora mucedo.* Tode. "Common Ascophora."

Flocci simple; sporangia terminal, at first globose, then oval, at length collapsed, sub-campanulate, whitish, then dark ashy-grey.—*Fr. S.M. iii. p. 310. Tode. i. t. 3, f. 22. Corda. Anl. t. c. f. 24, no. 1-4. Nees. f. 80. Grev. t. 269. Eng. Fl. v. p. 331. Pay. f. 370. Fckl. exs. no. 54. Cæm. Act. Belg. viii. f. 17. Pringsh. Jahrb. ii. t. 30, f. 29. Bisch. f. 3790.*

On bread, &c. Common. [Mid. Carolina.] (*Fig. 299.*)

1881. *Ascophora elegans*. Corda, "Elegant Ascophora."

Tufts minute, very fugacious, white; stem erect, rigid, fragile, white, simple above, with intricate dichotomous branches at the base; sporangia single, terminal, globose, brownish; sporidia ovoid.—*Corda*. iii. f. 43. *Thamnidium elegans*, *Lk. Obs.* i. t. 2, f. 45. *Nees*. f. 75. *Flora*. 1857, t. 5, f. 70.

On fowl's dung.

Gen. 266.**MUCOR, Mich.**

Fig. 300.

Threads free; sporangia at length bursting, but not dependent.—*Berk. Outl.* p. 407. (Fig. 300.)

**1882. *Mucor phycomyces*. Berk.
"Shining Mucor."**

Mycelium obsolete, flocci decumbent, olivaceous, shining; sporidia yellowish.—*Berk. Outl.* p. 407. *Phycomyces nitens*, *Bisch.* f. 3792. *Fr. S.M.* iii. p. 309. *Kunze. M.H.* ii. t. 2. f. 9. *Ann. N.H.* no. 224. *Byssus olivaceus*, *Winch. Fl. North.* p. 121.

On greasy walls, fat, &c.

[Low. Carolina.]

1883. *Mucor ramosus*. Bull. "Branched Mucor."

Laniform; fertile flocci branched, above racemose; sporangia globose.—*Bull.* t. 480, f. 3. *Fr. S.M.* iii. p. 318. *Pers. Obs.* i. t. 6, f. 5, 6. *Eng. Fl.* v. p. 331.

On rotting fungi, &c.

Sometimes the sporangia are reddish-brown, more commonly yellow than bluish-grey. The branches are alternate and racemose, divaricate.

1884. *Mucor mucedo*. L. "Common Mucor."

Byssoid; fertile flocci simple; sporangia and sporidia globose, at length blackish.—*Linn. Sp.* 1655. *Bolt.* t. 132, f. 1. *Sow. t.* 378, f. 6. *Fr. S.M.* p. 320. *Eng. Fl.* v. p. 332. *Bull.* t. 480, f. 2. *Mich.* t. 95, f. 1. *Fres. t.* 1, f. 1-12.

On fruit, paste, preserves, &c. Common. [United States.]

1885. *Mucor caninus*. P. "Dog's dung Mucor."

Fertile flocci simple, sporangia at length yellow or ferruginous, globose; sporidia globose or elliptic.—*Pers. Syn. p. 201. Pers. Obs. t. 6, f. 3, 4. Grev. t. 305. Fr. S.M. iii. p. 320. Desm. exs. no. 402. Eng. Fl. v. p. 332. Bisch. f. 3732. Fckl. exs. no. 52.*

On dung of cats and dogs. Common. [Mid. Carolina.]

Head at first white, then bright yellow, then yellow-brown, at length black. Occasionally the colour is not so bright, and in the last stage the heads are scarcely black. Flocci at first erect, soon leaning in every direction.—*M. J. B.* (Fig. 300.)

1886. *Mucor fusiger*. Lk. "Fusiform Mucor."

Byssoid; fertile flocci simple, sporangia globose, hyaline, at length black; sporidia fusiform.—*Link. Sp. i. p. 93. Fr. S.M. iii. p. 321. Eng. Fl. v. p. 332. Fckl. exs. no. 53.*

On decaying *Agarics*. [Low. Carolina.]

Flocci septate, filled internally with distinct granules, thinly scattered, divergent, springing from the branched mycelium in such a manner that several of the sterile flocci unite to give off the simple sporidiferous thread; sporidia exactly fusiform.—*M. J. B.*

1887. *Mucor clavatus*. Lk. "Clavate Mucor."

Byssoid; fertile flocci simple, penetrating the globose sporangia by their clavate apices; sporidia globose.—*Link Sp. i. p. 92. Fr. S.M. iii. p. 321. Eng. Fl. v. p. 332. Bon. t. 10, f. 202.*

On fruit, &c. Winter. [Low Carolina.]

Sporangia at first white, then brown, at length black; fertile flocci not septate, indistinctly granular within; sporidia minute.—*M. J. B.*

1888. *Mucor amethysteus*. Berk. "Amethyst Mucor."

Fertile flocci simple; sporangia white, then pale yellow, then crystalline, and pure violet, at length violet-black or brownish; sporidia globose, with globose sporidioli, dull violet.—*Berk. Eng. Fl. v. p. 332.*

On rotting pears. Winter. Apethorpe.

Fertile flocci about $\frac{1}{4}$ in. high, four times as thick as in *M. clavatus*, filled with distinct granules; sporangia depresso-globose, sometimes collapsing slightly and nodding; sporidia rather large, containing globose sporidiola, which easily separate; mycelium thick, expanded, pure white, closely interwoven.—*M. J. B.*

1889. *Mucor succosus*. Berk. "Spongy Mucor."

Very minute; hyphasma spongiose; sporangia very minute,

globose, yellow, then olive; columella minute.—*Berk. Ann. N.H. no. 225. t. 12, f. 15.*

On cut stumps of *Aucuba japonica*. May. Apethorpe.

Forming small pulvinate orange-ochre spongy masses, which, while there is abundant nutriment, do not fructify, but when gathered produce a forest of exceedingly minute globose yellow sporangia, not visible to the naked eye, at length becoming olive; columella very small, and little more than a slight swelling of the top of the stem.—*M. J. B.*

1890. *Mucor hyalinus*. Cooke. "Hyaline Mucor."

CONIDIA. Sterile flocci effused, fertile somewhat branched; conidia rose-coloured, oblong, subfusiform.—*Penicillium roseum*. *Link. Fr. S.M. iii. p. 409. B. & Br. Ann. N.H. no. 535.*

SPORANGIA. Hyphasma creeping, profuse; flocci white, erect, branching; branches simple, sometimes divided, terminated by a delicate, hyaline, globose sporangium, containing minute subglobose sporidia.—*Cooke exs. no. 359. Pop. Sci. Rev. Jan. 1861, t. 68, fig. 5.*

On leaves of box. Winter.

Forming a dense white coating over the leaves, mixed with *Penicillium roseum*, Link, of which it appears to be the mature condition. The sporangia are small and very delicate, so as to be made out with difficulty. In habit very much like the *Penicillium*, but without any roseate tint.

1891. *Mucor delicatulus*. Berk. "Delicate Mucor."

Fertile flocci simple, abbreviated, of the same thickness as those of the mycelium; sporangia globose, pale yellow; sporidia globose.—*Berk. Eng. Fl. v. p. 332.*

On rotting gourds. Autumn. Apethorpe.

So small as to be scarcely perceptible to the naked eye, forming a velvety stratum, saturated with the juice of the matrix; sporangia at first white, then very pale yellow, sometimes apparently springing immediately from the branched, septate mycelium, and decumbent.—*M. J. B.*

1892. *Mucor tenerrimus*. Berk. "Slender Mucor."

Scattered, minute, wholly white; stem flexuous above, apex clavate; head with a globose columella.—*Berk. Outl. p. 407. Hydrophora tenerrima, Berk. Hook. Journ. 1841, p. 78, t. i. f. B.*

On sticks in woods.

Scarcely visible to the naked eye; stem a little flexuous above, ending in a clavate swelling, beyond which is the globose columella, from the base of which is deflected all round over the apex of the stem a delicate frill which at first formed a portion of the pendulum, and by its rupture leaves a large circular aperture at its base. Sporangium quite smooth, of two membranes often separated, sometimes in close contact; sporidia elliptic, filling the cavity between the columella and the inner membrane.—*M. J. B.*

1893. Mucor subtilissimus. Berk. "Onion Mucor."

Mycelium creeping; fertile flocci branched; branches short, spreading, each terminated by a minute sporangium; vesicles at length vanishing; spores oblong-elliptic.—*Berk. Hort. Journ.* iii. p. 98, f. 1-5.

On mildewed onions, developed from *Sclerotium cepavorum* (*Ann. N.H. no. 168*).

This mould is so exceedingly minute that it may be considered as the most microscopic of any yet found in Britain.

Gen. 267.

PILOBOLUS, Tode.

Fig. 301.

Flocci simple, continuous, when mature ventricose above and clavate, terminated by an indurated, globose sporangium; dehiscent; including a globose sporidium.—*Fr. S.M.* iii. p. 312. (Fig. 301.)

1894. Pilobolus crystallinus. Tode.
"Crystalline Pilobolus."

Apices of the flocci at length clavate, obovate; sporangium hemispherical.—*Fr. S.M.* iii. p. 312. *Purt.* iii. t. 31. *Pers. Obs.* i. t. 4, f. 9, 10. *Bull.* t. 480, f. 1. *Sow.* t. 300. *Bolt.* t. 133, f. 1. *Dicks.* t. 3, f. 6. *Fckl. exs.* no. 49. *Corda. Icon.* vi. f. 32. *Bisch. f.* 3724. *Bon.* t. 10, f. 203. *Kl. exs.* no. 1630.

On dung.

[United States.]

"At first appearing, as Fries observes, under the form of a small yellow *Sclerotium*, which gradually acquires a stem, becomes inflated above, and loses its yellow hue; often densely tufted; very fugacious."—*M.J.B.*

1895. Pilobolus roridus. Schum. "Dewy Pilobolus."

Flocci elongated, filiform, apices globose; sporangium punctiform.—*Fr. S.M.* iii. p. 312. *Curr. Linn. Journ.* 1856, t. 2. *Pluck. phy.* t. 116, f. 7. *Bisch. f.* 3725. *Bolt.* t. 132, f. 4.

On dung.

[S. Carolina, U. S.]

Smaller and slenderer than *P. crystallinus*.

(Fig. 301, magnified.)

Gen. 268.

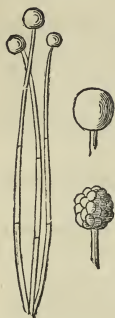
HYDROPHORA, Tode.

Fig. 302.

Threads erect, tubular, sparingly articulate, equal above, terminated by a vesicle which is at first watery and crystalline, then turbid, and at length indurated, and persistent from the conglomeration of the spores.—*Berk. Outl. p. 407. Eng. Fl. v. p. 331. (Fig. 302.)*

1896. Hydrophora stercorea. Tode.
 “Dung Hydrophora.”

Fleecy; flocci simple, very long, fugacious, white, sporangia spherical yellow, at length black.—*Fr. S.M. iii. p. 314. Eng. Fl. v. p. 331. Mucor stercoreus, Grev. Fl.*

Ed. p. 448. Corda. Icon. vi. f. 31? Fckl. exs. no. 51.

On dung.

Distinguished by the crystalline, watery, not membranous, and dehiscant sporangium, and the indurated mass of sporidia not falling away in water.

Gen. 269.

ENDODROMIA, Berk.

Fig. 303.

Vesicle very delicate, perforated by the stem, filled with delicate, branched, radiating threads and globose spores, with a nucleus endowed with active motion.—*Berk. Outl. p. 408. Hook. Journ. iii. p. 79. (Fig. 303.)*

1897. Endodromia vitrea. Berk. “Glassy Endodromia.”

Stem straight, slightly attenuated upwards, penetrating the sporangium; sporangium delicate, soon breaking up, filled with globose, colourless sporidia, and radiating, branched threads; sporidia with a globose nucleus.—*Berk. Hook. Journ. 1841, iii. t. 1, f. C.*

On fallen branches, especially ash.

Very minute, scarcely to be distinguished without the aid of a high magnifying power. Within each sporidium is a single globose nucleus, which moves about with great activity.—*M.J.B. (Fig. 303)*

Gen. 270.

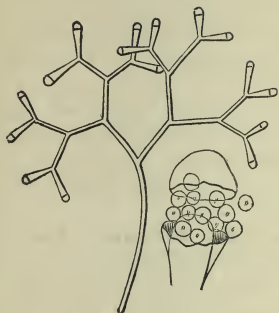
SPORODINIA, Link.

Fig. 304.

Stem dichotomously branched; vesicles solitary, terminal, at length splitting horizontally; columella large; spores simple, growing on the columella.—*Berk. Outl. p. 408.*

(Fig. 304.)

1898. Sporodinia dichotoma.*Corda.* "Dichotomous Sporodinia."

Tufts ochraceous; stem simple below, brown above, four times dichotomous; branches and ramuli spreading; sporangia

terminal, obovate, diaphanous, circumscissile; columella hemispherical; sporidia large, globose, colourless, hyaline.—*Corda. i. f. 284.*

(Fig. 304.)

On decaying fungi.

Gen. 271.

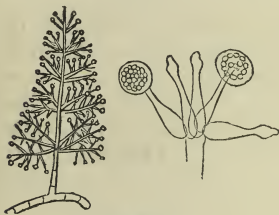
ACROSTALAGMUS, Corda.

Fig. 305.

Flocci branched; branches verticillate; vesicles terminal, pierced by the threads, from the tips of which the spores are produced within the cells.—*Berk. Outl. p. 408.*

(Fig. 305.)

1899. Acrostalagmus cinnabarinus. *Corda.* "Vermillion Acrostalagmus."

CONIDIA. *Verticillium lateritium*.—*Botrytis lateritia*, *Berk. exs. no. 98.*

SPORANGIA. Tufts effused, vermillion, then pulverulent, mycelium branched, septate; stem straight, rigid, septate, pellucid; branches 4-5 ternate, ramuli verticillate, quaternate, subulate, spreading, capitate; sporangia globose; sporidia oval.—*Corda. ii. f. 66. Willk. p. 92, f. a-e. Kl. exs. no. 1276. Fckl. exs. no. 155.*

On decaying plants.

A very beautiful and not uncommon species, often of a ruddy pink rather than vermillion. (Fig. 305, *magnified*.)

Gen. 272.

SYZYGITES, Ehrb.

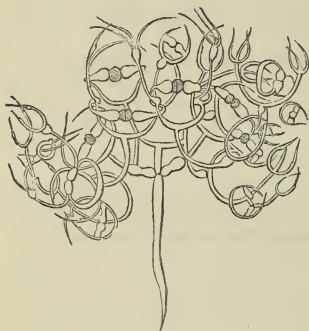


Fig. 306.

Threads branched above; vesicles of separate branches conjugating and forming a distinct sporangium.—*Berk. Outl.* p. 408. (Fig. 306.)

1900. *Syzygites megalocephalus*. Ehrb. "Conjugating Syzygites."

Tufts effused, irregular, dingy; olive-brown or glaucous; flocci intricate, filiform, cystomorphous; branches large, clavate, inflated, at first flesh coloured,

then dingy; sporangia brown, verrucose, shining; spores ovate, whitish.—*Ehr. Syl. Ber.* p. 21, t. 2. *Corda Pracht.* t. 24. *Bisch. f.* 3794. *Nees.* t. 5. (Fig. 306.)

On decaying agaries.

Gen. 273.

ENDOZONE, Link.



Fig. 307.

Hypogæous; flocci collected into a globose, spongy mass; vesicles globose, solitary, or collected in little fascicles at the ends of the branches.—*Fr. S.M.* ii. p. 295. *Tul. Hyp.* p. 181. *Berk. Outl.* p. 408. (Fig. 307.)

1901. *Endogone pisiformis*. Link. "Pea-shaped Endogone."

Irregularly globose, yellowish, dry; vesicles large, visible to the naked eye.—*Link. Obs.* t. 2, f. 52. *Tul. Hyp.* p. 183, t. 20, f. 1. *Corda. Ic.* vi. t. 9, f. 94. *Corda. Anl. t. c.* f. 40, no. 4, 5. *B. & Br. Ann. N.H.* xviii. p. 81. *Berk. Outl.* t. 24, f. 7. *Gard. Chron.* 14 Mar. 1845.

Amongst moss and in the superficial soil; under beech and larch, and in oak and hazel woods.

In a young state it is hard, when old less compact and granulated. About the size of a pea. Tulasne seems to regard the British plant as *Endogone macrocarpa*.—*Tul.*

1902. *Endogone lactiflua*. *B. & Br.* "Milky *Endogone*."

Irregular, globose, depressed, white, then dingy flesh-colour, fœtid, replete with a thick isabelline juice; vesicles distinct to the naked eye.—*B. & Br. Ann. N.H.* xviii. p. 81. *Berk. Outl.* p. 409. *Tul. Hyp.* p. 183.

On the ground. Oct. Chudleigh.

Globose, at length depressed, half an in. in diameter; at first white, but soon, especially when rubbed, assuming a reddish tinge, pouring out when cut a rich, pale-red, cream-like fluid; sporangia as large as those of *E. pisiformis*.

Order XXV. *SAPROLEGNIÆ.*

Fig. 308.

This order is at present uncertain, some considering it to belong to Algaes, others to Fungi; it is named here provisionally, without venturing any special claim to a place amongst moulds, though of opinion that the evidence seems to be in its favour.

The following works may be consulted with advantage:—

Pringsheim, N., Nachträge zur Morphologie der Saprolegnieen. Jahrbücher für wissenschaftliche Botanik, ii. p. 284 (1858); t. xix. xx. ii. p. 205, t. xix (1860).

Archer, W., On Saprolegniaceæ. Proceedings Dublin Microscopical Club, i. p. 17, 97.

Archer, W., On two New Species in Saprolegniæ. Proceedings Dublin Microscopical Club, i. p. 123.

Pringsheim, N., Monographie der Achyla prolifera. Nova Acta Nat. Curios., xxii. p. 1, t. 50.

De Bary, A., Einige neue Saprolegnieen. Pringsheims Jahrbücher, vol. ii. p. 169 (1860).

Unger, Dr., Recherches sur l'Achyla prolifera. Ann. des Sc. Nat. 3rd ser., vol. ii. p. 5 (1844).

Thuret, G., Recherches sur les Zoospores des Algues Saprolegniées. Ann. des Sc. Nat. 3rd ser., vol. xiv. p. 229 (1850).

Tute, J. S., Insect Moulds. Sci. Goss., 1865, p. 133.

Griffith & Henfrey, Micrographical Dictionary—"Achyla," p. 8 (1860).

Braun, A., Rejuvenescence in Nature, pp. 188, 268 (1853).

Robin, C., Histoire des Végétaux parasites, p. 372 (1853).

Cienkowski, in Botanische Zeitung, xiii. p. 801.

Nageli, C., Zeitschrift für Wiss. Bot., i. p. 102, iii. p. 28.



Fig. 309.

The following species are named as British :—

SAPROLEGNIA FERAX, Kutz. of which *Sporendonema muscæ*, Fries. or *Empusa muscæ*, Cohn. is an imperfect terrestrial condition. It is common on flies in autumn. (Figs. 308, 309.)

SAPROLEGNIA MONOICA. Prings. Archer in Proc. Dubl. Micr. Club, i. p. 17.

SAPROLEGNIA ANDROGYNA. *Archer*. Proc. Dubl. Micr. Club.
i. p. 98, 126, t. 3, f. 1.

ACHYLA PROLIFERA. *Nees*.

ACHYLA DIOICA. *Prings*.

ACHYLA CORNUTA. *Archer*. in Proc. Dubl. Micr. Club. i. p.
128, t. 3, f. 2-6.

APHANOMYCES STELLATUS. *De By*. *Archer* in Proc. Dubl.
Micr. Club. i. p. 17.

Family VII. ASCOMYCETES.

Fruit consisting of sporidia, mostly definite, contained in asci, springing from a naked, or enclosed stratum of fructifying cells, and forming an hymenium or nucleus.—*Berk. Outl. p. 357.*

The essential character of this important division consists in the development of definite or indefinite sporidia within certain of the external cells of the hymenium called *asci*, frequently accompanied by inarticulate or septate, simple or branched, threads, which are abortive asci, known under the name of *paraphyses*.—*Berk Intr. p. 270.*

Asci often evanescent.

Receptacle clavæform.

Asci springing from threads *Onygeni.* 641

Perithecia free.

Asci springing from the base *Perisporiacei.* 23

Asci persistent.

Perithecia opening by a distinct ostium *Sphaeriacei.* 751

Hard or coriaceous, hymenium at length exposed *Phacidiacei.* 753

Hypogeous ; hymenium complicated *Tuberacei.* 758

Fleshy, waxy, or tremelloid ; hymenium mostly exposed *Elvellacei.* 657

Order XXVI. ONYGENEI.

Peridium formed of closely interwoven threads ; sporidia at length forming a compact, dusty mass.—*Berk. Outl. p. 406.*

General receptacle clavæform or subglobose ; peridium brittle, filled with branched threads, which produce asci at different points ; asci soon absorbed ; sporidia filling the cavity of the peridium, pulverulent.—*Berk. Intr. p. 272.*

Gen. 274.

ONYGENA, Pers.

Parasitic on animal substances ; peridium stipitate, or sessile, papyraceous, at length splitting ; asci delicate ; sporidia at length forming a dusty mass.—*Berk. Outl. p. 406.* (*Fig. 309.*)

The species resemble little round-headed nails, and are smooth externally, and filled within with reddish powder, which is at first contained in asci. They are small and singular from their affecting animal substances, and their external resemblance to little puff-balls. (*Fig. 309.*)



Fig. 309.

1903. *Onygena equina.* Pers. "Hoof Onygena."

Head lenticular, furfuraceous, dirty white, at length more or less regularly splitting all round; stem abbreviated; sporidia oblong-ovate or ovate, simple; epispore pale tawny; nucleus oblong, hyaline.—*Pers. Syn. p.* 203. *Fckl. Sym. Myc. t.* 6, *f.* 19. *Moug. exs. no.* 775. *Grev. t.* 343. *Tul. Ann. Sc. Nat.* 1844, *t.* 17, *f.* 12-17. *Corda. vi. t.* 10, *f.* 96. *Fr. S.M. iii. p.* 207. *Eng. Fl. v. p.* 322. *Chev. t.* 8, *f.* 8. *Lycop. equinum. Sow. t.* 292. *Lycop. gossypinum. Bolt. t.* 178. *Ray. Syn. (ed. 3), t.* 1, *f.* 3. *Mich. t.* 97, *f.* 8. *Pers. Obs. ii. t.* 6, *f.* 3, *a. b. c. Fl. Dan. t.* 1309, *f.* 1. *Nees. f.* 121.

On hoofs of horses, &c.

[Mid. Carolina.]

(Fig. 309.)

1904. *Onygena piligena.* Fr. "Flannel Onygena."

Head globose, somewhat umbilicate beneath, peridium rupturing at the base, deciduous, membranaceous; stem elongated, equal.—*Fr. S.M. iii. p.* 208. *B. & Br. Ann. N.H. no.* 219. *Fl. Dan. t.* 1740, *f.* 2.

On old flannel. Sherwood Forest.

Gregarious; stem half in. long, equal, even, fibroso-striate. According to some the peridium is double, the outer being membranaceous, white, splitting to the base in unequal revolute laciniae, the inner very delicate and translucent.

1905. *Onygena apus.* B. & Br. "Bone Onygena."

Peridium white, sessile, globose, seated on a delicate, white mycelium, externally tomentose, mature mass red-brown.—*B. & Br. Ann. N.H. no.* 582.

On decaying bones. Nov. Bristol.

Peridia globose, white, sessile, seated on a delicate white mycelium, about the size of rape seeds, under a lens tomentose, but even, not rugose; sporidia ovate-elliptic, containing one or two granules, colouring the internal mass of a dark chocolate.—*B. & Br.*

Closely allied to the North American species *O. corrina.* A. & S.

Order XXVII. PERISPORIACEI.

Perithecia subglobose, always closed, except by decay, mostly membranaceous ; nucleus never diffuent.—*Berk. Outl. p. 403.*

Perithecia free, astomous, often surrounded by threads, distinct from the mycelium (*fulcra*). Asci tubular or saccate, often absorbed at an early stage, springing from the base, occasionally solitary. Many of the species grow on living leaves, and are very destructive.—*Berk Intr. p. 273.*

Perithecia collapsing above, attached to radiating fibres	<i>Lasiobotrys.</i> -
Perithecia subglobose, without distinct thallus or appendages	<i>Perisporium.</i> -
Conceptacle with one sporangium.	
Appendages floccose	<i>Sphærotheca.</i> -
Appendages dichotomous, thickened at the tips	<i>Podosphaera.</i> -
Conceptacle with many sporangia.	
Appendages needle-shaped, rigid	<i>Phyllactinia.</i> -
Appendages hooked	<i>Uncinula.</i> -
Appendages dichotomous	<i>Microsphaeria.</i> -
Appendages floccose	<i>Erysiphe.</i> -
Perithecia thin, brittle, sporangia linear, sporidia coloured	<i>Chaetomium.</i> -
Perithecia seated on conidiiferous threads	<i>Ascotricha.</i> -
Perithecia reticulated, attached to mucedinous threads	<i>Eurotium.</i> -

Gen. 275.

PERISPORIUM, Fr.

Perithecium subglobose, without any manifest thallus or appendages; asci clavate ; sporidia indefinite.—*Berk. Outl. p. 403. (Fig. 310.)*

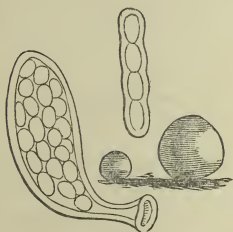


Fig. 310.

1906. Perisporium princeps.
Berk. "Princely Perisporium."

Peridia in clusters, sub-hemispherical, very black and large ; sporidia brown, very much crowded in the asci.—*Berk. in litt. Berk. Outl. p. 403. Berk. exs. no. 287.*

On a beam which had been taken out of a chimney and exposed to the weather. King's Cliffe.

1907. Perisporium vulgare. Corda. "Common Perisporium."

Gregarious, globose, black, erumpent or superficial; asci clavate; sporidia ovate, brown, concatenate in fours.—*Corda. ii. f. 97. B. & Br. Ann. N.H. no. 1103. Payen f. 442-249.*

On old rope. Nov. Batheaston. (Fig. 310.)

Sporidia in chains of four (.00025 in.) .006 m.m. long when separated; asci with a delicate stem.

1908. Perisporium arundinis. Desm. "Reed Perisporium."

Scattered, flattened, nearly black, minute; sporidia ovate, or oblong, pale brown.—*Desm. exs. no. 329. Berk Ann. N.H. no. 220. Fckl. exs. no. 644.*

On leaves of reeds and their sheaths. Spring.

"A very doubtful production."—*M. J. B.* Often barren.

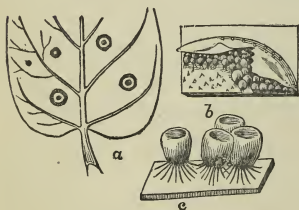
Gen. 276.**LASIOBOTRYS, Kunze.**

Fig. 311.

Erumpent; central peridium between fleshy and horny, proliferous, collapsing above, attached to radiating fibres; secondary peridia ascigerous; asci cylindrical.—*Berk Outl. p. 404.*

This genus differs from its allies in its subcuticular growth. (Fig. 311).

1909. Lasiobotrys lonicerae. Kze. "Honey-suckle Lasiobotrys."

Perithecia crowded in little orbicular tufts, even, depressed above; radiating filament simple; asci cylindrical, short, thick; sporidia?—*Kunze M.H. ii. p. 88. Grev. t. 191. Moug. exs. no. 860. Fr. S.M. iii. p. 233. Fr. Obs. i. t. 4, f. 7. Eng. Fl. v. p. 325. B. & Br. Ann. N.H. no. 661, t. xii. f. 44. Gard. Chron. Dec. 6, 1851. Desm. exs. no. 957. Corda. Anl. t. F. f. 53, 4-7. Bisch. f. 3701. Fckl. exs. no. 1749. Berk. exs. no. 48.*

On living leaves of *Lonicera*.

Epiphyllous, or cauline, with or without a yellow spot, at first covered by the epidermis, when mature very black, and regular, circular, from one to two lines in breadth, slightly convex, bursting at first in the centre, and exposing the perithecia.

(Fig. 311—*a*, nat. size; *b*, portion of tuft enlarged; *c*, perithecia magnified.)

LASIOBOTRYS LINNÆ, *Berk*, is *Venturia Dickiæi*.

Gen. 277.

SPHÆROTHECA, Lev.

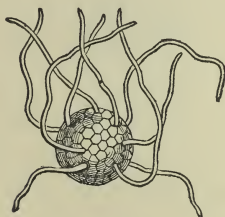


Fig. 312.

Mycelium arachnoid; perithecia globose, containing a single globose sporangium; appendages numerous, floccose.—*Berk. Outl. p. 404.* (Fig. 312.)

1910. *Sphærotheca pannosa*. *Lev.* "Rose Blight."

Mycelium thickened, woolly, felted, persistent; conceptacles minute, globose, scattered; appendages floccose, white; sporangium many-spored.—*Lev. Ann. Sc. Nat.* 1851, xv. p. 138, t. 6, f. 8. *Cooke Micr. F. t.* xi. f. 217, 218. *Cooke exs. no.* 90. *Eng. Fl.* v. p. 325. *Fckl. exs. no.* 725. *Erysiphe pannosa. Tul. Carp. i.* p. 208, t. 3. *Berk. exs. no.* 96. *Eurotium rosarum. Grev. t.* 164, f. 2. *Baxt. exs. no.* 92. *Fr. S.M.* iii. p. 232.

On the branches, calyces, petioles, and leaves of roses. Common.

The conidiophorous condition is *Oidium leucoconium*.—*Desmz.*

1911. *Sphærotheca Castagnei. Lev.* "Hop Blight."

On both surfaces; mycelium effuse, web-like, commonly evanescent; conceptacles minute, scattered, globose; appendages numerous, short, flexuose above; sporangium many-spored.—*Lev. Ann. Sc. Nat.* 1851, xv. p. 139, t. 6, f. 9, 10. *Cooke M.F. t.* xi. f. 216. *Cooke exs. no.* 91. *Fckl. exs. no.* 711-720. *E. Dipsacearum, Tul. Carp. i.* p. 210, t. 4, f. 4-9. *E. macularis, Eng. Fl.* v. p. 325. *Ayres. exs. no.* 22.

On leaves of hop, meadowsweet, and other plants.

(Fig. 312, conceptacle magnified.)

S. pannosa Crp.
Stungl. & Gignat
1851 report p. 94.

Gen. 278.

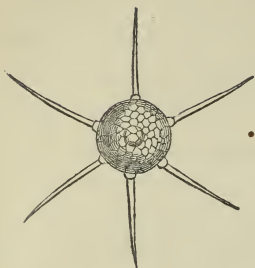
PHYLLACTINIA, Lev.

Fig. 313.

Perithecia hemispherical, at length depressed, seated on a persistent or evanescent membranaceo-granular receptacle; appendages straight, rigid, acicular, at length bent back.—*Berk. Outl.* p. 404. (Fig. 313.)

1912. Phyllactinia guttata.

Lev. "Hazel Blight."

Amphigenous; mycelium web-like, often evanescent; conceptacles large, scattered, hemispherical, at length depressed; appendages hyaline, rigid, simple; sporangia 4-20, containing 2-4 sporidia.—*Lev. Ann. Sc. Nat.* 1851, xv. p. 144, t. 7, f. 11. *Cooke M.F. t.* xi. f. 219, 220. *Cooke exs. no.* 92. *Fckl. exs. no.* 702-710. *Erysiphe guttata*, *Eng. Fl.* v. p. 327. *Bast. exs. no.* 96. *Tul. Carp. i.* p. 194, t. i. *Berk. exs. no.* 205.

On leaves of hawthorn, hazel, ash, elm, alder, beech, birch, oak, hornbeam, &c. Common. [United States.]

(Fig. 313, conceptacle magnified 300.)

Gen. 279.

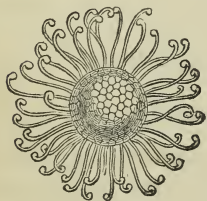
UNCINULA, Lev.

Fig. 314.

Mycelium floccose; perithecia globose; appendages rigid, simple, bifid, or dichotomous, uncinata, at length bent upwards.—*Berk. Outl.* p. 404. (Fig. 314.)

1913. Uncinula adunca. Lev.

"Willow Blight."

Mycelium variable; conceptacles scattered or gregarious, minute; appendages simple; sporangia 8-12, sub-pyriform, containing 4 spores.—*Lev. Ann. Sc. Nat.* 1851, xv. p. 150, t. 7, f. 15. *Cooke M.F. t.* xi. f. 221-224. *Fckl. exs. no.* 699-700. *E. Salicis*, *Tul. Carp. i.* p. 198, t. 2, f. 1. *E. adunca*, *Eng. Fl.* v. p. 327. *Grev. t.* 296. *Bast. exs. no.* 95.

On leaves of willows, poplars, birch, &c. [United States.]

(Fig. 314, conceptacle magnified.)

W. adunca

Amphigenous; mycelium web-like, effuse, evanescent, or like a membrane and persistent; conceptacles large, hemispherical, at length depressed; appendages simple, bifid, or dichotomous, uncinatè; sporangia 8, sub-pyriform, containing 8 spores.—*Lev. Ann. Sc. Nat.* 1851, xv. p. 153, t. 7, f. 17. *Cooke M.F.* t. xi. f. 225-228. *Cooke exs.* no. 93. *Fckl. exs.* no. 701. *E. aceris*, *Tul. Carp.* i. p. 197, t. 2, f. 2, 3. *E. bicornis*, *Eng. Fl.* v. p. 327. *Ayres, exs.* no. 78.

1915. Uncinula Wallrothii. *Lev.* "Sloe Blight."

Amphigenous; mycelium web-like, evanescent; conceptacles minute, scattered; sporanges 12-16, pear-shaped, 6-spored; appendages numerous, twice the length of the diameter of the conceptacles.—*Lev. Ann. Sc. Nat.* 1851, xv. p. 153, t. 7, f. 16. *Seem. Journ.* iv. p. 97. *Cooke M.F.* ii. ed. p. 223. *Erysiphe Prunastri*, *D.C. Fl. Fr.* vi. p. 108. *Tul. Carp.* i. p. 199. *Erysiphe adunca*, β , *Prunastri*, *Duby.* p. 870. *Fr. S.M.* iii. p. 245.

On the leaves of *Prunus spinosa*. October.

This species is very closely allied to *Uncinula adunca*, from which the length of the appendages, the number of sporanges, and of the spores, with its evanescent mycelium, distinguish it.

Gen. 280. **PODOSPHÆRA**, Kunze.

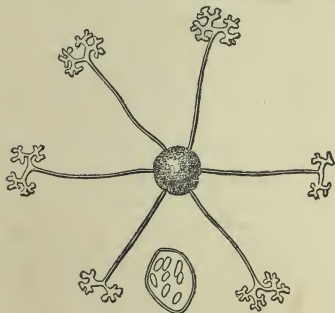


Fig. 315.

Mycelium effuse, web-like, evanescent; conceptacles spherical, containing one, sub-globose, 8-spored sporangium; spores ovate; appendages few, dichotomous, thickened at their extremities, hyaline. — *Lev. Ann. Sc. Nat.* (Fig. 315.)

1916. **Podosphaera Kunzei.** *Lev.* "Plum-leaf Blight."

Amphigenous; conceptacles minute, scattered, globose; appendages three times the length of the diameter of the concep-

tacles.—*Lev. Ann. Sc. Nat.* 1851, xv. p. 135, t. 6, f. 6. *Cooke Seem. Journ.* t. xlv. f. 3. *Cooke M.F.* ii. ed. p. 226. *Fckl. exs. no.* 726-728. *Erysibe tridactyla*, *Rabh. D. Krypt. Fl.* p. 237. *Desmz. Ann. Sc. Nat. ser.* 3, t. iii. p. 361. *Tul. Carp.* i. p. 201, t. 4, f. 11-13.

On the leaves of *Prunus domestica*. September.

[Mid. Carolina.]

(Fig. 315.)

1917. Podosphæra clandestina. *Lev.* "Hawthorn Blight."

Amphigenous; conceptacles minute, globose, scattered; appendages (8-10) equal in length to the diameter of the conceptacles; branches short and rounded at their extremities.—*Lev. Ann. des Sc. Nat.* 1851, xv. p. 135, t. 6, f. 5. *Cooke Seem. Journ.* t. xlv. f. 4. *Cooke M.F.* ii. ed. p. 226. *Fckl. exs. no.* 729. *Erysiphe Oxyacanthæ*, *D.C. Fl. Fr.* vi. p. 106. *Duby. Bot. Gall.* 868. *Cast. Cat.* p. 190. *Tul. Carp.* i. p. 202, t. 4, f. 10. *Erysiphe clandestina*, *Fr. Sys. Myc.* p. 238.

On the leaves of hawthorn. September.

Gen. 281.

MICROSPHÆRIA, *Lev.*

Mycelium arachnoid; appendages straight, dichotomous; branchlets swelling at the tip, or filiform.—*Berk. Outl.* p. 404.

(Fig. 316.)

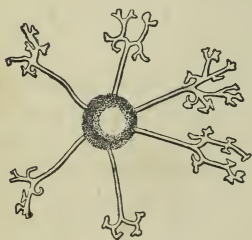


Fig. 316.

1918. Microsphæria Hedwigii. *Lev.* "Mealy Guelder-rose Blight."

Hypophyllous; mycelium web-like, evanescent; conceptacles minute, globose, scattered; appendages few, very little longer than the diameter of the conceptacles;

sporangia 4, ovate, containing 4 spores.—*Lev. Ann. Sc. Nat.* 1851, xv. p. 155, t. 8, f. 19. *Cooke M.F.* p. 219, t. xii. f. 243. *Calocladia Hedwigii*. *Fckl. exs. no.* 695.

On leaves of mealy guelder-rose.

[Low. Carolina.]

(Fig. 316, conceptacle magnified.)

1919. *Microsphæria penicillata.* Lev. "Guelder-rose Blight."

Amphigenous ; mycelium web-like, effuse, evanescent ; conceptacles scattered, minute, globose ; appendages 8-12, equal to the diameter of the conceptacle ; sporangia 4, ovate, rostrate, containing 8 spores.—*Lev. Ann. Sc. Nat.* 1851, xv. p. 155, t. 8, f. 21. *Cooke M.F. t. xi. f. 234. Fckl. exs. 690, 691. E. Alni, Tul. Carp. i. p. 203, t. 2, f. 5-7.*

On leaves of guelder-rose and alder. [United States.]

1920. *Microsphæria Mougeotii.* Lev. "Tea-tree Blight."

Amphigenous ; mycelium web-like, oftentimes persistent ; conceptacles minute, scattered or gregarious, globose, at length depressed ; appendages loosely dichotomous ; sporangia 12-16, on a short pedicel, 2-spored.—*Lev. Ann. Sc. Nat.* 1851, xv. p. 158, t. 9, f. 24. *Cooke M.F. p. 219.*

On leaves of *Lycium barbarum*. October.

1921. *Microsphæria berberidis.* Lev. "Berberry Blight."

Amphigenous ; mycelium web-like, oftentimes persistent ; conceptacles scattered or gregarious, globose, minute ; appendages few (5-10) ; branchlets long, divaricate, obtuse at their apices ; sporangia 6, ovate, containing 6-8 spores.—*Lev. Ann. Sc. Nat.* 1851, xv. p. 159, t. 10, f. 28. *Cooke M.F. t. xi. f. 229-232. Cooke exs. no. 95. Fckl. exs. no. 693. E. Berberidis, Tul. Carp. i. p. 204, t. 5, f. 1. E. penicillata. Eng. Fl. v. p. 327 (partly).*

On leaves of berberry. Autumn.

1922. *Microsphæria grossulariæ.* Lev. "Gooseberry Blight."

Amphigenous ; mycelium web-like, fugacious or persistent ; conceptacles scattered or gregarious, globose, minute ; appendages 10-15, vaguely dichotomous, ultimate branchlets bidentate ; sporangia 4-8, ovate, containing 4-5 spores.—*Lev. Ann. Sc. Nat.* 1851, xv. p. 160, t. 9, f. 25. *Cooke M.F. p. 220. Fckl. exs. no. 697. E. penicillata, Eng. Fl. v. p. 327 (partly).*

On gooseberry leaves.

1923. *Microsphæria comata.* Lev. "Spindle-tree Blight."

Hypophyllous ; mycelium web-like, fugacious ; conceptacles scattered, minute, globose ; sporanges, 8, ovate, with a beak-like termination at their base, 4-spored ; appendages few, six

times the length of the diameter of the conceptacles.—*Calocladia comata*, Lev. *Ann. des. Sc. Nat.* 1851, xv. p. 157, t. 9, f. 23. *Cooke Seem. Journ.* t. xlv. f. 5. *Cooke exs.* no. 94. *Cooke M.F.* t. xii. f. 248. *ed.* p. 226. *Fckl. exs.* no. 692. *Erysibe Euonymi*, DC. *Fl. Fr.* v. p. 105. *E. penicillata*, *ε. Euonymi*, Fr. *S.M.* iii. p. 244.

On the leaves of *Euonymus Europæus*. September.

Gen. 282.

ERYSIPHE, Hedw.

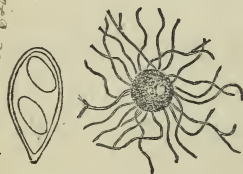


Fig. 317.

Mycelium arachnoid; appendages floccose, simple, or irregularly branched.—*Berk. Outl.* p. 404. (Fig. 317.)

* Sporangia 2-spored.

1924. *Erysiphe Linkii*. Lev. "Mugwort Blight."

Amphigenous; mycelium web-like, fugacious or persistent; conceptacles minute, globose, scattered, emersed; appendages white, interwoven with the mycelium; sporangia 8-20, pyriform, with elongated pedicels.—*Lev. Ann. Sc. Nat.* 1851, xv. p. 161, t. 10, f. 29. *Cooke M.F.* t. xii. f. 248, 249. *Cooke exs.* no. 199. *Fckl. exs.* no. 648, 649. *E. communis*. *Eng. Fl.* v. p. 325 (partly).

On leaves of mugwort. Autumn.

1925. *Erysiphe lamprocarpa*. Lev. "Composite Blight."

Amphigenous; mycelium web-like, fugacious, or persistent; conceptacles minute, globose, scattered, or gregarious; appendages coloured, interwoven with the mycelium; sporangia 8-16, shortly pedicellate.—*Lev. Ann. Sc. Nat.* 1851, xv. p. 163, t. 10, f. 31. *Cooke M.F.* t. 12, f. 250, 251. *Cooke exs.* no. 200. *Fckl. exs.* no. 650-658.

On leaves of Salsify, Scorzonera, Plantain, &c. Autumn.

(Fig. 317, Conceptacle and Sporangium magnified.)

** Sporangia 3-8 spored.

1926. Erysiphe graminis. D.C. "Grass Blight."

Amphigenous or epiphyllous; mycelium effuse, floccose, persistent; conceptacles large, gregarious or disseminated, hemispherical, at length depressed and semi-immersed; appendages simple or interwoven with the mycelium; sporangia 20-24, ovate, pedicellate, with 8 spores.—*Lev. Ann. Sc. Nat.* 1851, xv. p. 165, t. 10, f. 33. *Cooke M.F. t.* xi. f. 235, 236. *Ayres. exs. no.* 23. *Tul. Carp. i. p.* 212. *Fckl. exs. no.* 659.

On leaves of grasses. Autumn.

The conidiiferous condition of this species is *Oidium monilioides*. Link.

1927. Erysiphe martii. Lk. "Pea Blight."

Amphigenous; mycelium web-like, very often evanescent, globose; appendages short, interwoven with the mycelium; sporangia 4-8 globose, pedicellate, with 4-8 spores.—*Lev. Ann. Sc. Nat.* 1851, xv. p. 166, t. 10, f. 34. *Cooke M.F. t.* xi. f. 237-239. *Cooke exs. no.* 96. *Fckl. exs. no.* 660-671. *E. pisi. Tul. Carp. i. p.* 216, t. 5, f. 7, a. b. *E. communis. Eng. Fl. v. p.* 325 (partly).

On leave of peas, beans, *Umbelliferae*, &c. Autumn. Common. [Up. Carolina.]

1928. Erysiphe Montagnei. Lev. "Burdock Blight."

Amphigenous or hypophyllous; mycelium web-like, evanescent; conceptacles minute, globose, gregarious or scattered; appendages distinct from the mycelium; sporangia 8, ovate, rostrate, with 2-3 spores.—*Lev. Ann. Sc. Nat.* 1851, xv. p. 169, t. 11, f. 36. *Cooke M.F. p.* 220. *Cooke exs. no.* 97. *Fckl. exs. no.* 673, 674. *E. communis. Eng. Fl. v. p.* 325 (partly).

On leaves of Burdock.

1929. Erysiphe tortilis. Lk. "Cornel Blight."

Hypophyllous; mycelium web-like, effuse, evanescent; conceptacles minute, globose; appendages ten times as long, free from the mycelium, flexuose; sporangia 4, ovate, rostrate, with 4 spores.—*Lev. Ann. Sc. Nat.* 1851, xv. p. 170, t. 11, f. 35. *Cooke M.F. t.* xii. f. 245, 246. *Cooke exs. no.* 98. *Eng. Fl. v. p.* 327. *Tul. Carp. i. p.* 213. *Fckl. exs. no.* 672. *Berk. exs. no.* 204.

On leaves of common Dogwood. Autumn.

1930. Erysiphe communis. *Schl.* "Buttercup Blight."

Hypophyllous; mycelium effuse, web-like, evanescent or persistent; conceptacles minute, globose, scattered or gregarious; appendages short; sporangia 4-8, ovate, rostrate, with 4-8 spores.—*Lev. Ann. Sc. Nat.* 1851, xv. p. 171, t. 11, f. 38. *Cooke M.F. t.* xii, f. 240-242. *Cooke exs.* no. 99. *Eng. Fl.* v. p. 325 (partly). *Tul. Carp.* i. p. 214, t. 5, f. 3-7. *Fckl. exs.* no. 675-685. *Berk. exs.* nos. 200-203, 269-313.

On leaves of *Ranunculaceæ*, *Leguminosæ*, &c. Autumn. Common. *Baptisia* *virginica* [United States.]

1931. Erysiphe horridula. *Lev.* "Bugloss Blight."

Amphigenous; mycelium web-like, sometimes persistent; conceptacles minute, globose, scattered, or clustered; sporanges 20-24, oblong-ovate, attenuated downwards, containing 3-4 spores; appendages short, flexuose, and bent upwards.—*Lev. Ann. Sc. Nat.* 1851, xv. p. 170, t. 11, f. 37. *Cooke Seem. Journ. Fckl. exs.* no. 688.

On leaves of *Lycopsis arvensis*. Oct. [Low. Carolina.]

Gen. 283.**CHÆTOMIUM, Kze.**

Fig. 318.

Perithecium thin, brittle, mouthless; sporangia linear, containing dark lemon-shaped sporidia.—*Berk. Outl.* p. 405. *Eng. Fl.* v. p. 327. (Fig. 318.)

1932 Chætomium elatum. *Kze.* "Straw Bristle-Mould."

Perithecium sub-ovate, base radiato-fibrose, hairs of the vertex very long, interwoven, branched; sporidia broadly elliptic, apiculate at either end.—*Kunze M.H. i. t. i. f.* 3. *Grev. t.* 230. *Fr. S.M.* iii. p. 254. *Fr. exs.* no. 459. *Cooke M.F. t.* xii. f. 257-259. *Cooke exs.* no. 100. *Eng. Fl.* v. p. 328. *Fckl. exs.* no. 646. *Sphaeria scopula.* *Sow. t.* 386, f. 4. *Berk. exs.* no. 49.

On mouldering straw, &c. Common.

[Low. & Mid. Carolina.]

It has been stated that *Sporodum conopleoides* is the conidiophorous state of this species.—See No. 1756, ante.

1933. *Chætomium chartarum.* Ehb. "Paper Bristle-Mould."

Perithecium subglobose, black, surrounded by a bright yellow spot; sporidia subglobose.—*Fr. S.M.* iii. p. 255. *Cooke M.F.* t. xii. f. 252, 253. *Eng. Fl.* v. p. 328.

On paper. Stibbington, Hants. [United States.]

"The sporidia are decidedly more globose than in *C. elatum*, having very little of the peculiar lemon-like form of that species."—*M. J. B.*

(*Fig. 318, Perithecium and free spore magnified.*)

1934. *Chætomium glabrum.* B. "Smooth Bristle-Mould."

This species has never been described. It was recorded, by name only, in Berkeley's Outlines, and, the specimens being mislaid, that gentleman is unable to describe it completely and correctly.

On damp straw.

"It grew abundantly on straw, and differed from *Chætomium elatum* in being perfectly free from hairs."—*M. J. B.*

1935. *Chætomium murorum.* Corda. "Wall Bristle-Mould."

Sub-gregarious, glaucous, then blackish; perithecium globose, brown; hairs circinate, erect, septate, pulverulent; sporidia oblong, yellowish.—*Corda.* ii. t. 13, f. 103. *Cooke, M.F. ed.* ii. p. 226.

On plaster.

CHÆTOMIUM INDICUM, *Corda*, has been found in London on paper which had come from Burmah, but it has no claim to be included as British.—*Cooke exs.* no. 216.

Gen. 284.

ASCOTRICHA, Berk.

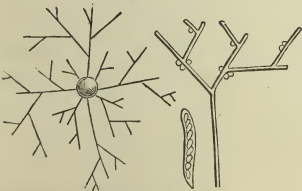


Fig. 319.

Perithecium thin, free, mouthless, seated on loose, branched, conidiiferous threads; sporangia linear, containing dark elliptic sporidia.—*Berk. Outl.* p. 405.

(*Fig. 319.*)

1936. *Ascotricha chartarum*. B. "Paper Mildew."

Perithecium thin, olive-brown, seated on radiating flocci; sporangia linear, numerous; sporidia broadly elliptic, chocolate-coloured.—*Berk. Ann. N.H. no 116. Cooke M.F. p. 221, t. xii. f. 254-256.*

On white printed paper. King's Cliffe.

(Fig. 319.)

Gen. 285.**EUROTIIUM, Link.**

Fig. 320.

Perithecia reticulated, vesicular, coloured, attached to mucedinous threads; sporangia delicate.—*Berk. Outl. p. 405. (Fig. 320.)*

1937. *Eurotium herbariorum*. Lk. "Herbarium Mould."

Perithecium spherical, sub-depressed, yellow, seated upon radiating, expanded, branched, intricate flocci.—*Lk. Sp. i. p. 79. Eng. Fl. v. p. 333. Grev. t. 164, f. 1. Fr. S.M. iii. p. 332. Cooke M.F. p. 222, t. xii. f. 260, 261. Fckl. exs. no. 1748. Farinaria sulphurea, Sow. t. 379, f. 3.*

On plants in herbaria and various decaying substances. Common. [United States.] *Ym.*

This is now admitted to be an ascigerous condition of *Aspergillus glaucus*. See No. 1757, ante. (Fig. 320.)

Order. XXVIII. ELVELLACEI.

Hymenium at length more or less exposed; substance soft.
—*Berk. Outl.* p. 358.

Receptacle pileate or clavate—	
Hymenium folded and pitted	<i>Morchella.</i>
Hymenium even	<i>Helvella.</i>
Hymenium rugulose	<i>Verpa.</i>
Hymenium smooth, viscid	<i>Leotia.</i>
Receptacle clavate, confluent with stem	<i>Geoglossum.</i>
Receptacle inflated—	
Hymenium ribbed	<i>Gyromitra.</i>
Receptacle capitate—	
Head distinct, inflated	<i>Mitrula.</i>
Head compressed, running down the stem	<i>Spathularia.</i>
Head orbicular, hymenium velvety	<i>Vibrissea.</i>
Receptacle crustaceous, effused, with root-like fibrils	<i>Rhizina.</i>
Receptacle cup-shaped—	
Disc soon open	<i>Peziza.</i>
Disc always open	<i>Helotium.</i>
Receptacle indeterminate	<i>Psilopezia.</i>
Receptacle patellæform, margined—	
Asci fixed	<i>Patellaria.</i>
Asci exploded	<i>Ascobolus.</i>
Receptacle cyathiform, horny	<i>Tympanis.</i>
Receptacle closed, then open, coriaceous	<i>Cenangium.</i>
Receptacle orbicular, then truncate	<i>Bulgaria.</i>
Receptacle spherical, waxy	<i>Agyrium.</i>
Receptacle deciduous—	
Disc waxy, persistent	<i>Laquearia.</i>
Receptacle obsolete—	
Hymenium immersed in matrix	<i>Stictis.</i>
Hymenium a pulverulent stratum	<i>Ascomyces.</i>

Gen. 286.

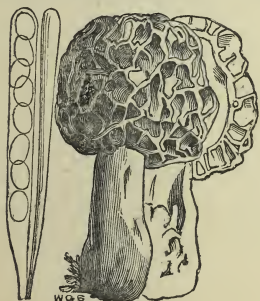
MORCHELLA, Dill.

Fig. 321

Receptacle clavate or pileate, impervious in the centre, stipitate, covered with the hymenium, which is deeply folded and pitted.
—*Fr. S.M.* ii. p. 5. *Berk. Outl.* p. 358. (Fig. 321.)

1938. Morchella esculenta.

Pers. "Common Morel."

Pileus ovate, adnate at the base; ribs firm, anastomosing, and forming deep pits; stem even; asci very long, sporidia oblong-

ovate.—*Fr. S.M.* ii. p. 6. *Badh.* i. t. 12, f. 2, ii. t. 12, f. 6. *Hogg. & Johnst.* t. 2. *Vent.* t. 16, f. 5-8. *Fckl. exs.* no. 1243. *Rav. exs.* i. no. 36. *Tratt. Aust.* t. 6, no. 11. *Tratt. Ess. t. E.E. Smith, E.M.* f. 20. *Grev.* t. 68. *Huss.* i. t. 13. *Berk. Outl.* t. 21, f. 5. *Cooke B.F.f.h. Phallus esculentus*, *Bolt.* t. 91. *Schæff.* t. 199. *Bull.* t. 238? *Mich.* t. 85, f. 1. *Sow.* t. 51 (part). *Batt.* t. ii. f. *F. Fl. Dan.* t. 53. *Vent.* f. 107-109. *Roq.* t. 1, f. 4-5. *Hrz.* t. 50. *Bisch.* f. 3302. *Eng. Fl.* v. p. 182.

In woods, &c. Spring—Summer. Esculent.

[S. Carolina.]

Varying much in breadth and height, sometimes conical, sometimes almost cylindrical. Pileus 2-3 in. high, yellowish, olivaceous, cinereous, &c., the ribs sometimes tinged with a different colour from the cells. Stem hollow, 1-3 in. high.—*M.J.B.* (Fig. 321.)

1939. *Morchella crassipes.* Pers. "Gigantic Morel."

Pileus subconic, brown, base adnate, ribs irregular, undulated, thick; pits polymorphous, large, deep, the bottom cellulose-plicate; stem large, tall, incrassated at the base, lacunose, attenuated upwards, smooth, somewhat flesh-coloured.—*Pers. Syn.* p. 621. *B. & Br. Ann. N.H.* no. 1151. *Smith Seem. Journ.* 1868, t. 73. *Vent.* p. 509, f. 2. *Fr. S.M.* ii. p. 9. *Krombh.* t. 16, f. 1.

In a hedgerow. April. S. Devon. Esculent.

Sporidia oval, yellow, depressed (·0007-·0008 in.) ·017-·02 m.m. long (·00032-00042 in.), ·007-·01 m.m. broad. The substance of the flesh is not so firm as that of *M. esculenta*, and not so readily dried; it becomes moist and is apt to decompose.—*W.G.S.* Attains a height of nine in. or more, and is remarkable for its grooved stem.

1940. *Morchella patula.* Pers. "Spreading Morel."

Pileus obtuse, free to the middle, pits rhomboid; stem even.—*Fr. S.M.* ii. p. 10. *Nees.* f. 164. *Sow.* t. 51 (partly). *Eng. Fl.* v. p. 183. *Bisch.* f. 3301.

In woods, &c. Rare.

Obtusely and broadly conic; stem 2 in. high; cells even within.

1941. *Morchella semilibera.* D.C. "Half-free Morel."

Pileus conical, free to the middle, ribs longitudinal, forming oblong pits, which are veined within; stem even; sporidia large, oval.—*Fr. S.M.* ii. p. 10. *Mich.* t. 84, f. 3. *Vent.* t. 11, f. 105, 106. *Grev.* t. 89. *Eng. Fl.* v. p. 183. *Morchella hybrida.* *Sow.* t. 238. *Kl. exs.* no. 232.

Under hedges, &c. Esculent.

Pileus when young conic or sub-globose-conic, yellowish-olive, the reticulations formed by ribs running down with tolerable regularity from the apex, oblong, with a few wrinkles within; stem short, thickest at the base, slightly furfuraceous; pileus when mature $1\frac{1}{2}$ in. high, nearly as broad, darker, free for rather more than half its height, reticulations still oblong, but occasionally some are rhomboidal; sporidia large, oval, yellowish; stem 5 in. or more high, 1 in. thick at the base, hollow, pitted and wrinkled below, more or less grooved through its whole length, flexuous, slightly tinged with reddish brown, decidedly furfuraceous, crisp; taste pleasant.—*Eng. Fl.*

Gen. 287. GYROMITRA, Fr.

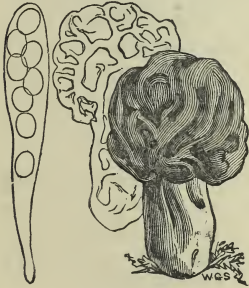


Fig. 322.

Helvella esculenta, Fr. *S.M.* ii. p. 16. Schæff. t. 160? Fckl. exs. no. 2087. Tratt. Essb. t. C.C. Kl. exs. no. 138. Badh. ii. t. 12, f. 3-5.

In pine woods. April. Rare. Weybridge.

(Fig. 322.)

Gen. 288. HELVELLA, Linn.



Fig. 323.

Receptacle pileate, hanging down over the stem; concave and barren below; hymenium even.—Fr. *S.M.* ii. p. 13. Berk. *Outl.* p. 358.

(Fig. 323.)

1943. Helvella gigas. Kromb.
"Large Helvella."

Pileus large, lobed, undulate, plicate or crisp, pallid, whitish or ochraceous; lobes sub-adnate, adpressed to the stem; stem thick, cellular, waxy, whitish, lacunose,

nearly smooth; asci rather large; spores large, oval, granular.—*Krombh. t.* 20. *Curr. Linn. Trans.* xxiv. *t.* 25, *f.* 25. *Ann. N.H.* no. 1060.

On the ground. Blackheath Park.

Very variable in colour.

1944. *Helvella crispa.* Fr. "Pallid *Helvella*."

Pileus deflexed, lobed, at length free, crisped, pallid; stem fistulose, costato-lacunose; asci sub-clavate; sporidia ovate, hyaline, granular.—*Vent. t.* 11, *f.* 110. *Corda. Anl. t. G. f.* 67, 7-8. *Bisch. f.* 3274. *Fckl. exs. no.* 1242. *Fr. S.M. ii. p.* 14. *Berk. Outl. t.* 21, *f.* 4. *Grev. t.* 143. *Sow. t.* 39. *Ray. Syn. ed.* 3, *p.* 8, *no.* 59. *Schæff. t.* 282. *Bull. t.* 466. *Fl. Dan. t.* 1560. *Cooke B.F. f.* i. *Mich. t.* 86, *f.* 7. *Gled. t.* 2, *f.* 3. *Batt. t.* 2, *f.* 9. *Tratt. Ess. t. D. D. Eng. Fl. v. p.* 184. *Price. t.* 7, *f.* 47. *Badh. i. t.* 14, *f.* 2, *ii. t.* 5, *f.* 1. *Smith E.M. f.* 16. *Vent. t.* 31, *f.* 1, 2. *Rav. exs. vi. no.* 75. *Berk. exs. no.* 264.

In woods. Common. Esculent. [S. Carolina.]

Pileus whitish, flesh coloured, or yellowish. Stem 3-5 in. high, snowy-white, deeply lacunose and ribbed, the ribs hollow.—*Eng. Fl.*

1945. *Helvella lacunosa.* Afz. "Cinereous *Helvella*."

Pileus inflated, lobed, cinereous black, lobes deflexed, adnate; stem fistulose, costato-lacunose; asci cylindrical, stipitate; sporidia ovate, hyaline.—*Badh. i. t.* 14, *f.* 1. *Fl. Boruss. t.* 383. *Vent. t.* 31, *f.* 4-5. *Fl. Dan. t.* 1968, *f.* 1. *Bail. t.* 21. *Fckl. exs. no.* 1241. *Price t.* 16, *f.* 100. *Fr. S.M. ii. p.* 15. *Holms. ii. t.* 24. *Schæff. t.* 154, *t.* 162. *Nees. f.* 163. *Cooke B.F. f. k. Eng. Fl. v. p.* 184. *Grev. t.* 36. *Berk. exs. no.* 265.

In woods. Common. Esculent. [Low. Carolina.]

Stem white or dusky.

1946. *Helvella sulcata.* Afz. "Sulcate *Helvella*."

Pileus deflexed, lobed, adnate; stem stuffed, equal, sulcate; spores broadly elliptic.—*Afz. t.* 10, *f.* 1. *Fr. S.M. ii. p.* 15. *Batt. t.* 3, *f.* B. *B. & Br. Ann. N.H.* 1866, *no.* 764, 1152.

On the ground. Oct. Bowood. [Mid. Carolina.]

Spores very broadly elliptic, with a single large globose nucleus ('0006-'0007 in.) '015-'017 m.m. long. Solitary, rarely gregarious, smooth. Stem 2 in. long, 4-5 lines thick, attenuated upwards, longitudinally sulcate; pileus deflexed, equally 2-3 lobed, even, compressed, darker when dry.—*B. & Br.*

1947. *Helvella elastica*. Bull. "Peziza-like *Helvella*."

Pileus free, even, inflated, at length acutely lobed; stem elongated, thin, attenuated, pruinose.—*Fl. Dan.* 1608, f. 2. *Corda. v. f.* 70. *Corda. Anl. t.* 67, f. 4-6. *Cooke exs. no.* 233. *Kl. exs. no.* 137. *Fr. S.M. ii. p.* 21. *Bull. t.* 242. *Bolt. t.* 95. *Sow. t.* 154. *Schæff. t.* 220. *Eng. Fl. v. p.* 184. *Ann. N.H. no.* 86. *Fckl. exs. no.* 2086. *Kromb. t.* 21, f. 21. *Berk. exs. no.* 266.

In woods.

Much resembling in some of its forms *Peziza macropus*. (Fig. 323.)

1948. *Helvella ephippium*. Lev. "Minute *Helvella*."

Small; pileus deflexed, lobed, decidedly velvety beneath.—*Lev. Ann. Sc. Nat. ser. ii. vol. xvi. p.* 240, t. 14, f. 7. *B. & Br. Ann. N.H. no.* 552. *Schæff. t.* 321. *Rav. exs. vi. no.* 74.

On the ground in wood. Spring and autumn. [S. Carolina.]

Scarcely 1 in. high. Very near to *H. elastica*, and differs principally in its dwarf size and decidedly velvety coat.—*B. & Br.*

Gen. 289.

VERPA, Swartz.

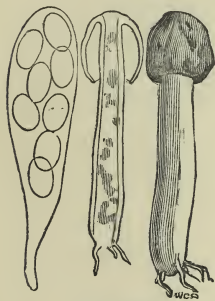


Fig. 324.

Receptacle clavato-plicate, hollow below, and inflated, or conical and adpressed, equally deflexed all round; hymenium rugulose, but not costate, or nearly even.—*Berk. Outl. p.* 359. (Fig. 324.)

1949. *Verpa digitaliformis*. Pers. "Finger-shaped *Verpa*."

Pileus campanulate, finger-shaped, rugulose, umber; stem equal, transversely squamulose; sporidia yellowish, elliptic.—*Fr. S.M. ii. p.* 24. *Pers. M.E. t.* 7, f. 1-3. *Berk. Outl. t.* 21, f. 6. *Corda. Sturm. t.* 7, t. 6. *Eng. Fl. v. p.* 184. *Pay. f.* 380. *Kl. exs. no.* 1629.

Under hedges. Rare.

Pileus at first nearly even, olivaceous-umber, dark at the apex; stem obese, furnished at the base with a few subrufous radicles, white, with a slight rufous tinge marked with transverse rufous spots, smooth to the naked eye, but under a lens clothed with fine adpressed flocci, the rupture of which gives rise to the spots which are, in fact, minute scales. In the mature plant the pileus is $\frac{3}{4}$ in. high, campanulate, digitaliform, or subglobose, more or less closely pressed to the stem, but always free, the edge sometimes inflexed so as to form a white border, wrinkled, but not reticulated, under side

slightly pubescent; sporidia yellowish, elliptic; stem 3 in. high, $\frac{1}{2}$ in. or more thick, slightly attenuated downwards, loosely stuffed, by no means hollow.—*Eng. Fl.* (Fig. 324.)

1950. *Verpa conica*. Sow. "Yellow-stemmed Verpa."

Pileus campanulate, nearly even, brown; margin subsinuated, yellow beneath, as well as the equal stem.—*Fr. S.M.* ii. p. 24. *Sow. t.* 11. *Fl. Dan. t.* 654. *Eng. Fl. v. p.* 185. *Corda. Sturm. t.* 11.

On the ground. Rare.

Gen. 290.

MITRULA, Fr.

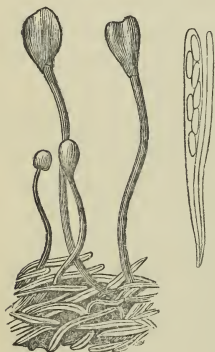


Fig. 325.

Soft and fleshy, simple, capitate; stem distinct; hymenium surrounding the inflated club.—*Berk. Outl. p.* 360. (Fig. 325.)

1951. *Mitrula cucullata*. Fr. "Hooded Mitrula."

Head ovate, hood-shaped, even, sub-ferruginous; stem thread-shaped; asci elongated-clavate; sporidia narrowly lanceolate, hyaline, with 2-3 nuclei.—*Krombh. t.* 5, f. 23-24. *Berk. Outl. p.* 360. *Batsch. f.* 132. *Cooke exs. no.* 232. *Sow. t.* 84. *Berk. exs. no.* 254. *Pers. Disp. t.* 3, f.

12. *Grev. t.* 81. *Fr. S.M. i. p.* 492. *Geoglossum cucullatum. Eng. Fl. v. p.* 179. *Fl. Dan. t.* 1670, f. 2. *Kabh. exs. no.* 37. *Bisch. f.* 3378. *Fckl. exs. no.* 1237.

Amongst fir leaves.

Often overlooked from its small size.

1952. *Mitrula paludosa*. Fr. "Marsh Mitrula."

Head ovate, obtuse, inflated, even, orange; stem pale, hollow; asci linear; sporidia lanceolate, hyaline.—*Fr. S.M. i. p.* 491. *Ray. Syn. p.* 23. *Bull. t.* 463, f. 3. *Sow. t.* 293. *Dicks. t.* 9, f. 10. *Pers. Syn. t.* 3, f. 15. *Fl. Dan. t.* 1377. *Grev. t.* 312. *Berk. exs. no.* 278. *Huss. i. t.* 9. *Eng. Fl. v. p.* 180. *Bail. t.* 21. *Kl. exs. no.* 238. *Fckl. exs. no.* 1236. *Rav. exs. v. no.* 36.

On leaves, in ditches, &c. Local.

[S. Carolina.]

Pileus very variable in form, hollow, of a delicate bright orange-yellow; asci linear, containing about four linear truncate sporidia.—*Grev. (Fig. 325.)*

Gen. 291.

SPATHULARIA, P.

Fig. 326.

Disc capitate, compressed, running down into the stem on either side.—*Berk. Outl. p. 360.* (*Fig. 326.*)

1953. Spathularia flavida. Pers. "Yellow Spathularia."

Head spathulate, compressed, even, yellow; stem whitish; asci clavate; sporidia linear, multi-nucleate, curved.—*Corda ii. f. 125. Krombh. t. 5, f. 22. Price t. 5, f. 34. Fr. S.M.i. p.*

491. *Berk. Outl. t. 21, f. 7. Grev. t. 165. Pay. f. 21-375. Schæff. t. 149. Schmid. t. 50, f. 1. Sow. t. 35. Berk. exs. no. 257. Schm. exs. no. 194. Nees. f. 156 A.B. Eng. Fl. v. p. 179. Kl. exs. no. 815. Corda. Anl. t. G. f. 66, 6-10. Fckl. exs. no. 1143.*

In fir woods. July—October.

Mostly gregarious, 3-5 in. high; pileus hollow, yellow, rarely reddish, much compressed, more or less of an erect obovate form, slightly inflated, undulated or even lacunose, sometimes bifid, or inclining to be lobed. The stem appears to pass along and eventually penetrate the pileus half way or near the summit; sporidia discharged elastically.—*Grev. (Fig 326.)*

Gen. 292.

LEOTIA, Hill.

Fig. 327.

Receptacle pileate, supported in the centre by the stem; margin revolute, covered everywhere with the smooth, somewhat viscid hymenium.—*Berk. Outl. p. 360.* (*Fig. 327.*)

1954. Leotia lubrica. Pers. "Slimy Leotia."

Tremelloid; pileus swollen, repand, greenish yellow; stem hollow, subequal, yellow; asci cylindrical; paraphyses branched; sporidia oblong, obtuse, curved, hyaline.—*Fr. S.M. ii. p. 29. Berk. Outl. t. 22, f. 1. Grev. t. 56. Corda. ii. f. 126. Rav. exs. vi. no. 77. Vaill. t. 11, f. 7-9. Cooke*

exs. no. 23. Mich. t. 82, f. 2. Berk. exs. no. 255. Bull. t. 473, f. 2. Fekl. exs. no. 1138. Sow. t. 70. Nees. f. 162. 144 B. Pers. M.E. t. 9, f. 4-7. Fl. Dan. t. 719. Eng. Fl. v. p. 186. Corda. Anl. t. G. f. 66, 15-17. Kl. exs. no. 911. Price t. ii. f. 10.

In woods. Common.

[S. Carolina.]

Varying greatly in size and form; stem at first pulpy within, sometimes squamulose.—*M. J. B.*

(*Fig. 327.*)

Gen. 293.

VIBRISSEA, Fr.

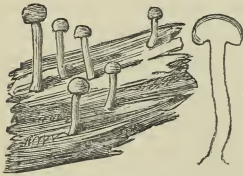


Fig. 328.

Receptacle capitate, supported in the centre by the stem, covered above with the hymenium; margin adnate to the stem; asci and filiform sporidia bursting forth, and rendering the hymenium velvety.—*Berk. Outl. p. 361. (Fig. 328.)*

1955. Vibrissea truncorum. Fr. "Golden Vibrissea."

Simple; head orbicular, golden yellow; stem cylindrical, glaucous, then blackish.—*Fr. S.M. ii. p. 31. Bisch. f. 3374. Bail. t. 21. Corda. Anl. t. G. f. 66, 1-2. A. & S. t. 3, f. 2. Pers. M.E. t. 11, f. 9. Moug. exs. no. 781. Eng. Fl. v. p. 186.*

On wood in water. Rare.

[Mid. Carolina.]

Receptacle 1-2 lines broad, barren beneath; stem 2 lines—1 in. or more high.—*M. J. B.*

(*Fig. 328.*)

Gen. 294.

GEOGLOSSUM, P.



Fig. 329.

Receptacle clavate, simple, confluent with the stem; hymenium surrounding the club.—*Berk. Outl. p. 361. (Fig. 329.)*

1956. Geoglossum viride. P. "Green Geoglossum."

Subfasciculate, verdigris-green, clubs distinct; stem squamulose; sporidia elliptic, colourless.—*Fr. S.M. i. p. 489. Grev. t. 211. Fl. Dan. t. 1258. f. 1. Eng. Fl. v. p. 179. Holms. i. p. 24, with fig. Pers. Comm. t. 3, f. 3. Ditm. Sturm. t. 48. Bisch. f. 3389. Pay. f. 379. Schnzl. t. 16, f. 11, 12. Kl. exs.*

no. 1613. *Nov. Act.* (1842), t. 57, f. 146-148. *Fckl. exs. no.* 1140. *Krombh. t.* 54, f. 26-27.

In woods.

1957. Geoglossum olivaceum. *P.* "Olive Geoglossum."

Smooth, dry, dingy-olive ; clubs compressed, distinct.—*Fr. S.M. i. p.* 489. *Ann. N.H. no.* 765. *Price t.* 16, f. 102.

var. β. purpureum. Dingy purple.—*Berk. Outl. t.* 22, f. 3.

On lawns. Oct. Rare.

Sporidia (0006 in.) 015 m.m. long.

1958. Geoglossum glutinosum. *P.* "Glutinous Geoglossum."

Smooth, blackish ; clubs compressed, distinct ; stem viscid.—*Fr. S.M. i. p.* 489. *Eng. Fl. v. p.* 178. *Kl. exs. no.* 641, ii. no. 319.

Grassy places. Rare.

Stem nearly equal, 1 in. or more high, clothed with tenacious gluten, reddish brown, inclining to black ; receptacle somewhat lanceolate, obsoletely viscid, blacker than the stem.—*Fries.*

1959. Geoglossum viscosum. *P.* "Viscid Geoglossum."

Smooth, viscid, black ; clubs cylindrical, confluent with the stem ; sporidia linear, rounded at the ends, curved, triseptate, pale-brown.—*Fr. S.M. i. p.* 489. *Eng. Fl. v. p.* 178. *Grev. t.* 55. *Loud. f.* 16186. *Fckl. Sym. Myc. p.* 333.

Moist meadows, pastures, &c.

1960. Geoglossum glabrum. *P.* "Smooth Geoglossum."

Smooth, dry, blackish ; stem subsquamulose ; sporidia fasciculate, linear-fusiform, 3-4 septate, dark brown.—*Krombh. t.* 5, f. 20, 21. *Price t.* 3, f. 17. *Fckl. exs. no.* 1142. *Eng. Fl. v. p.* 178. *Fr. S.M. i. p.* 488. *Vaill. t.* 7, f. 5. *Mich. t.* 87, f. 4. *Bull. t.* 372. *Clav. ophioglossoides, Bolt. t.* 111, f. 2. *Fl. Dan. t.* 1076, f. 2. *Schm. exs. no.* 47. *Corda. Anl. G. f.* 65, 1-4. *Bisch. f.* 3379. *Kl. exs. no.* 239.

Grassy places.

[Mid. Carolina.]

1961. Geoglossum hirsutum. *P.* "Hairy Geoglossum."

Black, hairy ; head confluent with the stem ; sporidia fasciculate, elongated fusiform, somewhat curved, 15-septate, dark brown.—*Corda. ii. f.* 124. *Eng. Fl. v. p.* 178. *Fr. S.M. i. p.* 488.

Sow. t. 85. *Schæff. t.* 327. *Nees. f.* 157. *Schm. exs. no.* 122. *Mich. t.* 87, *f.* 3. *Berk. Outl. t.* 22, *f.* 2. *Corda. Anl. G. f.* 65, *f.* 5-8. *Bisch. f.* 3380-3384. *Loud. f.* 16184. *Rav. exs. vi. no.* 79. *Fckl. exs. no.* 1141.

Amongst grass. Common.

[S. Carolina.]

1962. Geoglossum difforme. *Fr.* "Twisted Geoglossum."

Smooth, even, subviscid, black; club compressed, distinct; sporidia linear, curved, tri-septate, pale-brown.—*Krombh. t.* 54, *f.* 28, 29. *Fr. S.M. i. p.* 489. *Berk. exs. no.* 256. *Eng. Fl. v. p.* 178. *Kl. exs. ii. no.* 424. *Price t.* 18, *f.* 117.

Amongst grass. Sept.—Oct.

[United States.]

Receptacle compressed, lanceolate, hollowed out on either side, distorted, distinct, smooth, very slightly viscid, dark brown-black, 1 in. or more long. Stem equal, cylindrical, but little compressed, $1\frac{1}{2}$ in. high, 2 lines thick; sporidia as in *G. viscosum*.—*M.J.B.* (*Fig.* 329, *nat. size.*)

Gen. 295.

RHIZINA, Fr.



Fig. 330.

Crustaceous, effused, then bullato-inflated, underset with root-like fibrils.—*Fr. S.V.S.*

Receptacle effused, crustaceous, bullate, concave beneath, furnished with numerous root like fibrillæ; margin deflexed; hymenium occupying the whole of the superior surface, even, persistent; asci fixed, large; sporidia ovato-oblong, with two sporidioli; stem none; pileus convex, subrotund, determinate, margin at first byssoid; substance fleshy.—*Fr. S.M. ii. p.* 33. (*Fig.* 330.)

1963. Rhizina undulata. *Fr.* "Waved Rhizina."

Effused, undulated, bay-brown; margin inflexed, flocculose beneath and pallid; asci linear, eight spored; sporidia fusiform, binucleate; paraphyses claviform.—*Fr. S.M. ii. p.* 33. *Tul. Hyp. t.* 21, *f.* 16. *B. & Br. Ann. N.H. no.* 1076. *Intell. Obs. no.* 25. *Curr. Linn. Trans. xxiv. p.* 493, *t.* 51, *f.* 7-9. *Rabh. exs. no.* 39.

On sandy banks where the heath had been burnt down. Ascot.

[S. Carolina.]

Some of the specimens have a raised yellow margin, as in *R. laevigata*, but this vanishes with age. Sporidia colourless or yellowish ($0012\text{--}0014$ in.) $025\text{--}03$ m.m. long. (*Fig.* 330.)

Gen. 296.

PEZIZA, Linn.

Fig. 331.

Cup-shaped; cup more or less concave, soon open; disc naked; asci fixed.—*Fr. S.M.* ii. p. 40.

Fries divides this genus into three groups, with the following distinguishing characteristics:—

(Fig. 331.)

Externally pruinose or floccoso-furfuraceous	<i>Aleuria</i> .
Externally pilose or villous	<i>Lachnea</i> .
Externally almost naked, smooth	<i>Phialea</i> .

Series 1. **Aleuria**, Fr.

Fleshy or carnosio-membranaceous, externally pruinose, or floccoso-furfuraceous. Mostly terrestrial.

Stem firm, sulcate, elongated	<i>Macropodes</i> .
Subsessile, oblique, or twisted	<i>Cochleata</i> .
Subsessile, regular	<i>Cupulares</i> .
Small, somewhat fleshy, margin flocculose	<i>Humaria</i> .
More or less coriaceous	<i>Encelia</i> .

The last section, *Encelia*, scarcely accords with the characters of the series.

Sec. 1. *Macropodes*—stem firm, sulcate, or elongated.1964. **Peziza acetabulum**. L. "Reticulated *Peziza*."

Cyathiform, dingy, ribbed externally with branching veins, which run up from the short, lacunose, fistulose stem.—*Fr. S.M.* ii. p. 44. *Fckl. exs.* no. 1231-2084. *Sow. t.* 59. *Vaill. t.* 13. *f. 1. Bull. t.* 485, *f. 4. Eng. Fl. v.* p. 187. *Acetabula vulgaris*, *Fckl. Sym. Myc.* p. 330.

On the ground in spring. Esculent. [Low. Carolina.]

Cup 2 in. broad, 1½ in. high, externally floccoso-furfuraceous, light-umber, darker within, mouth contracted, firm, tough, flesh not very thick; stem ½ in. high, smooth, deeply, but regularly costato-lacunose, the ribs branching at the top and forming reticulations on the outside of the cup, so as to present the appearance of a cluster of pillars supporting a font or roof, with fret-work between them.—*Eng. Fl.* Sporidia .016-.024 × .012-.016 m.m.—*Nyl.*

(Fig. 331.)

1965. *Peziza macropus.* Pers. "Long-stemmed *Peziza*."

Cup hemispherical, hirtio-verrucose, cinereous; disc mouse-coloured; stem very long, attenuated; sporidia ellipsoid.—*Fr. S.M.* ii. p. 57. *Buxb.* iv. t. 29, f. 2. *Eng. Fl.* v. p. 189. *Bull.* t. 457, f. 2, t. 196. *Sow.* t. 38. *Schæff.* t. 166. *Bolt.* t. 96. *Pers. Obs.* ii. t. 1, f. 2. *Fl. Dan.* t. 1200, f. 2. *Holms.* ii. t. 10. *Fckl. exs. no.* 1234. *Grev.* t. 70. *Macropodia macropus*, *Fckl. Sym. Myc.* p. 331. *Cooke exs. no.* 289.

On the ground in woods. Common. [United States.]

Varying greatly in the degree of pubescence, occasionally the border of the pileus is reflexed, and there is then no small degree of resemblance to *Helvella elastica*.—*Eng. Fl.*

Sporidia $\cdot 022\text{--}\cdot 027 \times \cdot 011\text{--}\cdot 014$ m.m. *Nyl.* Sporidia ellipsoid $\cdot 02\text{--}\cdot 027 \times \cdot 011\text{--}\cdot 014$ m.m. ($\cdot 0007\text{--}\cdot 0009 \times \cdot 00035$ in.) paraphyses filiform, thickened at the apex. —*Karst.*

1966. *Peziza tuberosa.* Bull. "Tuberous *Peziza*."

Thin, cup infundibuliform, bright brown, turning pale; stem elongated, springing from an irregular black tuber (sclerotium).—*Fr. S.M.* ii. p. 58. *Hedw.* t. 10, f. B. *Berk. exs. no.* 153. *Bull.* t. 485, f. 2, 3. *Sow.* t. 6, 3. *Rabh. exs. no.* 1522. *Gonn. & Rabh.* iii. t. 1, f. 1. *Fckl. exs. no.* 1235. *Huss.* ii. t. 10. *Moug. & N. exs.* 397. *Eng. Fl.* v. p. 189. *Sclerotinia tuberosa*, *Fckl. Sym. Myc.* p. 331.

On the ground in woods. Spring. [Mid. Carolina.]

Stem running deep into the earth, 1-3 in. high, attached to a *Sclerotium*.

Sporidia oblong-ellipsoid, simple, $\cdot 008\text{--}\cdot 016 \times \cdot 005\text{--}\cdot 009$ m.m. ($\cdot 0003\text{--}\cdot 0006 \times \cdot 00019\text{--}\cdot 00035$ in.)—*Karst.*

1967. *Peziza rapulum.* Bull. "Wine-cup *Peziza*."

Thin, yellowish-brown, cup infundibuliform, nearly smooth; stem twisted, root elongated, fibrillose.—*Fr. S.M.* ii. p. 59. *Bull.* t. 485, f. 3. *Nees.* f. 291. *Holms.* ii. t. 9. *Eng. Fl.* v. p. 189.

On the ground. Rare. [Low. Carolina.]

Observed only by Dickson.

Sect. 2. Cochleatæ—subsessile, pruinose, oblique, or twisted.

1968. *Peziza venosa.* P. "Veined *Peziza*."

Sessile, somewhat twisted, dark umber, white beneath, rugose with costate veins.—*Fr. S.M.* ii. p. 46. *Jacq. Mis.* t. 17, f. 1. *Berk. Outl.* t. 22, f. 6. *Grev.* t. 156. *Huss.* ii. t. 7. *P. reticulata*, *Eng. Fl.* v. p. 187.

On the ground in spring. Esculent?

Many inches broad. Odour strong, like that of nitric acid.

1969. *Peziza badia*. *P.* "Large brown *Peziza*."

Subsessile, entire, flexuose, brown, margin at first involute, externally pruinose, paler, inclining to olive (as well as the margin); sporidia oblong-ovate, epispore rough.—*Fr. S.M.* ii. p. 46. *Vaill. t.* 11; *f.* 3. *Bolt. t.* 99. *Berk. Outl. t.* 22, *f.* 4. *Huss. ii. t.* 13. *Eng. Fl.* v. p. 187. *Gonn. & Rabh. iii. t. i. f.* 3. *Rabh. exs. no.* 337.

Margin of ponds. Summer.

[Up. Carolina.]

Variable in colour. 1-2 in. broad, subcæspitose, irregular, slightly pruinose externally, villous at the base, and often lacunose; disc occasionally porous, extremely changeable in colour, often, in the same individual, changing from rufous to a beautiful olive, brownish, &c.—*Fries*.

Sporidia ellipsoid, rough $\cdot 016\text{-}\cdot 02 \times \cdot 008\text{-}\cdot 011$ m.m. ($\cdot 0005\text{-}\cdot 0007 \times \cdot 0003$ in.)—*Nyl.*

Sporidia ellipsoid, rough $\cdot 015\text{-}\cdot 02 \times \cdot 008\text{-}\cdot 011$ m.m.—*Karst.*

Sporidia $\cdot 0178\text{-}\cdot 02 \times \cdot 009$ m.m.—*G. & R.*

1970. *Peziza phlebophora*. *B. & Br.* "Small-veined *Peziza*."

Cups poculiform, oblique, substipitate, finely pulverulent, venoso-costate at the base.—*B. & Br. Ann. N.H.* (1866), no. 1153, t. 3, f. 9.

On clay banks. King's Cliffe, Brislington.

Cup $\frac{1}{2}$ - $1\frac{1}{2}$ in. across, often rather oblique, yellow or brownish, springing from a very short, stem-like base, from which branched ribs are given off, ending in little pits; sporidia ($\cdot 0004$ in.) $\cdot 01$ m.m. long; hymenium often venose.

1971. *Peziza cochleata*. *Huds.* "Whorled *Peziza*."

Sessile, cæspitose, large, twisted, umber, externally pruinose; sporidia oblong-ovate.—*Fr. S.M.* ii. p. 50. *Buxb. iv. t.* 29, *f.* 1. *Bull. t.* 154, *f.* 2. *Sow. t.* 5. *Sv. Bot. t.* 486, *f.* 2. (*Schæff. t.* 274, var.) *Eng. Fl.* v. p. 188.

Amongst grass.

[United States.]

Sporidia $\cdot 015\text{-}\cdot 016 \times \cdot 006\text{-}\cdot 007$ m.m. ($\cdot 0005 \times \cdot 0002$ in.)—*Nyl.*

Sporidia $\cdot 006\text{-}\cdot 007$ m.m. broad, 1- $1\frac{1}{2}$ times as long.—*G. & R.*

1972. *Peziza succosa*. *Berk.* "Pale Milky *Peziza*."

Cup nearly regular, entire, pale waxy-brown, externally white and pruinose; juice bright yellow; asci elongated, slightly flexuose; sporidia ovate, with two nuclei.—*Berk. Ann. N.H. no.* 156, t. 10, f. 5. *Berk. Outl. p.* 363.

On the ground, in gardens. Norths. [Low. Carolina.]

Cup one in. in diameter, hemispherical or subglobose, with the margin incurved, within of a pale waxy brown, without paler and mealy. The flesh when broken pours out a yellow juice.—*M. J. B.*

1973. *Peziza leporina.* *Batsch.* "Brown-ear *Peziza*."

Substipitate, elongated on one side, ear-shaped, sub-ferruginous, externally farinose, internally, and base even.—*Fr. S.M. ii. p. 47. Schæff. t. 156. Fl. Dan. t. 1077, f. 2. Fckl. exs. no. 1233. Nees. f. 278. Holms. ii. t. 6. Rabh. F.E. no. 512. Otidea leporina. Fckl. Sym. Myc. p. 329.*

On the ground, in wood.

Sometimes cinereous or yellowish; sporidia ($\cdot 0006$ in.) $\cdot 015$ m.m. long, with curved paraphyses.

Sporidia $\cdot 018\text{--}\cdot 031 \times \cdot 009\text{--}\cdot 014$ m.m.—*Nyl.*

Sporidia ellipsoid $\cdot 018\text{--}\cdot 03 \times \cdot 009\text{--}014$ m.m. with one or two nuclei ($\cdot 0006\text{--}\cdot 0011 \times \cdot 00035\text{--}0005$ in.—*Karst.*

Sporidia $\cdot 009\text{--}013$ m.m. broad, and about twice as long.—*G. & R.*

1974. *Peziza onotica.* *P.* "Orange-ear *Peziza*."

Substipitate, elongated on one side, ear-shaped, externally mealy, internally rosy or orange, base at length rugose; sporidia oblong-ovate.—*Fr. S.M. ii. p. 48. Fl. Boruss. t. 396. Sturm. iii. t. 16. Sv. Bot. t. 436, f. 1. P. leporina. Sow. t. 79. Eng. Fl. v. p. 187. Rabh. F.E. no. 215. Otidea onotica. Fckl. Sym. Myc. p. 329.*

On the ground, in woods. Rare. Coed Coch.

[Mid. Carolina.]

Cup 3-4 in. high; sporidia $\cdot 011\text{--}\cdot 015 \times \cdot 007\text{--}\cdot 009$ m.m.—*Nyl.*

Sporidia ellipsoid, $\cdot 015\text{--}\cdot 021 \times \cdot 008\text{--}\cdot 011$ m.m. with one or two nuclei.—*Karst.*

Sporidia ($\cdot 0005$ in.) $\cdot 0127$ m.m. long.

1975. *Peziza aurantia.* *Fr.* "Orange Ground *Peziza*."

Subsessile, irregular, oblique, orange, externally somewhat pruinose, whitish; sporidia elliptic, rough.—*Fr. S.M. ii. p. 49. Sterb. t. 26, f. D. Schæff. t. 148. Bull. t. 474. Fl. Dan. t. 657, f. 2. Fckl. exs. no. 1228. Nees. f. 179. Batsch. f. 157. Fl. Boruss. t. 384. Holms. ii. t. 7. P. coccinea. Sow. t. 78. Bolt. t. 100. Cooke B.F. front. Huss. i. t. 37. Eng. Fl. v. p. 187. Gonn. & Rabh. iii. t. 2, f. 3. Aleuria aurantia. Fckl. Sym. Myc. p. 325.*

On the ground, in woods. Common.

[Cincinnati.]

At first hemispherical, with a short stem, margin almost involute, at length split, curled, and flexuous, of the clearest orange within; externally ale, mealy, with minute sparkling granules. — *Eng. Fl.*

Sporidia ellipsoid, $0.12-0.16 \times 0.08-0.1$ m. ($0.04-0.05 \times 0.003$ in.) with two nuclei. — *Karst.*

Sporidia $0.20-0.23 \times 0.09-0.11$ m.m. — *G. & R.*

1976. *Peziza luteo-nitens.* B. & Br. "Bright Yellow *Peziza*."

Crowded, bright yellow; cups concave, nearly regular, at length flexuose; asci linear; sporidia elliptic, with two nuclei; paraphyses filiform; apices slightly clavate. — *B. & Br. Ann. N.H. no. 556. Berk. Outl. p. 364.*

On the bare ground. Rare. King's Cliffe.

Bright orange yellow, when very young globose, then concave, gradually becoming irregular, and at length flexuous, smooth externally, $\frac{1}{4}-\frac{1}{2}$ in. broad, resembling at first sight stunted specimens of *P. aurantia*, but essentially different, not only as proved by the habit, but the smooth, not echinulate or pointed sporidia. — *B. & Br.*

1977. *Peziza fibrillosa.* Curr. "Woolly Orange *Peziza*."

Cup 1 in. broad, nearly sessile, irregular, orange, clothed externally with dingy-white downy fibrillæ, which form a rather dense tomentose edging to the cup; spores quite smooth, elliptical without nuclei; paraphyses filiform, enlarged spherically at the apex. — *Curr Linn. Trans. xxiv. p. 153.*

On the ground. Oct., 1861. Hanham wood.

In some of the asci I noticed a cupulate depression at the summit. Allied to *P. aurantia*, from which it differs in the woolly external covering, and smooth sporidia.

Sporidia ($0.006-0.007$ in.) $0.15-0.17$ m.m. long. — *F. C.*

Sect. 3. Cupulares. Subsessile, regular.

* *Pustulatæ.*

1978. *Peziza repanda.* Wahl. "Spreading *Peziza*."

Large, incised, waved, brown, internally somewhat wrinkled, brown, externally farinose, whitish; base elongated, rooting; sporidia oblong-ovate, rough — *Fr. S.M. ii. p. 51. Jacq. Misc. t. 10. Grev. t. 59. Eng. Fl. v. p. 188. Pers. Ic. Pict. t. 20, f. 2? Plicaria repanda. Fckl. Sym. Myc. p. 328.*

On the ground, and stumps.

Variable in size; pileus when splitting never convolute.

Sporidia $0.10-0.14 \times 0.06-0.07$ m.m. — *Nyl. 1.*

Sporidia $0.15-0.18 \times 0.08-0.09$ m.m. ($0.005-0.006 \times 0.003$ in.) — *Nyl. 2.*

1979. *Peziza cerea*. Sow. "Waxy *Peziza*."

Large, infundibuliform, waved, yellowish, externally whitish, as well as the villous, stem-like base.—*Fr. S.M.* ii. p. 52. *Sow. t. 3. Eng. Fl.* v. p. 188. *Plicaria cerea*. *Fckl. Sym. Myc.* p. 327. *Gonn. & Rabh.* iii. t. 2, f. 1. *Fckl. exs.* no. 1225.

On tan beds, &c. Rare.

Abundantly on leaves, &c., in a hothouse, at Uffington, Lincolnshire. March. Very brittle.

Sporidia ellipsoid, $\cdot 017\text{--}\cdot 018 \times \cdot 007\text{--}\cdot 009$ m.m. ($\cdot 0006 \times \cdot 00027\text{--}\cdot 00035$ in.)—*Nyl. Karst.*

Sporidia ellipsoid, $\cdot 008\text{--}\cdot 009$ m.m. broad, and about twice as long.—*G. & R.*

1980. *Peziza vesiculosa*. Bull. "Bladdery *Peziza*."

Large, entire, sessile, at first globose, somewhat top-shaped, connivent; then campanulate; mouth subcrenate, pallid brown, externally furfuraceous; sporidia elliptic.—*Fr. S.M.* ii. p. 52. *Bull. t.* 457, f. 1. *Mich. t.* 36, f. 2. *Sow. t.* 4. *Grev. t.* 107. *Bolt. t.* 175? *Eng. Fl.* v. p. 188. *Pustularia vesiculosa*. *Fckl. Sym. Myc.* p. 329.

On dung-hills, hot-beds, &c. Common. [Mid. Carolina.]

The hymenium is generally separable from the substance of the cup.

Sporidia ($\cdot 0009$ in.) $\cdot 022$ m.m. long.

Sporidia ellipsoid, $\cdot 017\text{--}\cdot 022 \times \cdot 009\text{--}\cdot 014$ m.m. ($\cdot 0006\text{--}\cdot 0007 \times \cdot 00035\text{--}\cdot 0004$ in.)—*Nyl.*

Sporidia ellipsoid, $\cdot 016\text{--}\cdot 022 \times \cdot 009\text{--}\cdot 004$ m.m.—*Karst.*

Sporidia $\cdot 011\text{--}\cdot 014$ m.m. broad, and twice as long.—*G. & R.*

1981. *Peziza macrocalyx*. Riess. "Violet Ground *Peziza*."

At first buried, then half exposed; cups subglobose, splitting in a stellate manner, externally dirty blue, subtomentose, internally violet; stem short; asci cylindrical, truncate; sporidia elliptic, with one or two nuclei; paraphyses branched, jointed.—*Fres. Beitr.* p. 75, t. 9, f. 7. *Smith Seem. Journ.* 1869, p. 345, t. 98. *Fckl. exs.* no. 2196. *Sarcosphæra macrocalyx*. *Fckl. Sym. Myc.* p. 329.

Under fir trees. March.

"It is found underground, in forests of fir trees, singly or from two to five together; in its progressive development it rises about half out of the ground. At first it is closed, but later it splits, starlike, from the top downwards to the middle of its cups, or sometimes even further down still into from 7 to 10 more or less pointed strips. The exterior is of a dirty pale blue, clothed with a thin white transient fur, and at the base of the cup is a short stem. In large specimens the cup is three inches high and broad, deeply cup-shaped, with the rim at length bent outwards. The hymenium is at first pale, and later a darker violet. Sporidia $\cdot 025$ m.m. long.—*Fresenius*."

1982. *Peziza bufonia*. Pers. "Warty Brown *Peziza*."

Large, bright brown, externally verrucose; stem short, rooting, becoming pallid.—*Pers. M.E.* p. 225. *Berk. Gard. Chron.* Jan. 13, 1866. *B. & Br. Ann. N.H.* (1866), no. 1154, t. 3, f. 12.

On rubbish heaps. Grantham.

A fine species, agreeing in size and colour with *P. umbrina*, externally rough, with conical warts, opaque, and of a dingy earth-colour, somewhat resembling *P. vesiculosa*, but distinguished by the brown hymenium and verrucose cup. Sporidia (·00075-·0008 in.) ·018-·02 m.m. long.—*B. & Br.*

1983. *Peziza micropus*. Pers. "Short-footed *Peziza*."

Middle-sized, oblique, dingy, pallid, externally squamulose, mealy; base stem-like; asci very long, cylindrical; sporidia oblong-ovate, with two nuclei.—*Fr. S.M.* ii. t. 54. *Pers. Ic. & Des.* t. 8, f. 5. *Berk. Outl.* t. 22, f. 5. *Pustularia micropus*. *Fckl. Sym. Myc.* p. 328.

On beech stumps. Rare.

[Mid. Carolina.]

1984. *Peziza trachycarpa*. Curr. "Rough-spored *Peziza*."

Orbicular, then plane, very often umbilicate; disc blackish-brown, rough, tuberculate, externally minutely granulated; sporidia uniseriate, globose, muricate.—*Curr. Linn. Trans.* xxiv. t. 51, f. 3. *B. & Br. Ann. N.H.* (1865) no. 1061, t. xiv. f. 13. *Rabh. exs.* no. 620.

On burnt soil. Ascot.

Cups $\frac{1}{4}$ - $\frac{1}{2}$ in. broad, adpressed to the soil, sub-stipitate, or obconic; sporidia uniseriate, globose, muricate, brown, ·012-·016 m.m. (·0005-·0007 in.) diameter. Though the sporidia are brown under the microscope, when thrown down on black paper they are of a whitish-grey.

1985. *Peziza leiocarpa*. Curr. "Smooth-spored *Peziza*."

Cup at first connivent, sub-globose, externally (principally towards the margin) rough, vinous-brown, thin, semi-pellucid, sometimes pallid near the base, at length expanded, almost plane; hymenium olive-brown; sporidia globose, even.—*Curr. Linn. Trans.* xxiv. t. 51, f. 6. *B. & Br. Ann. N.H.* (1865) no. 1062, t. xiv. f. 14. *Rabh. exs.* no. 622.

On burnt soil. Ascot. Weybridge.

Cup $\frac{1}{2}$ - $2\frac{1}{2}$ in. broad; hymenium at first pale, then dark olive-brown; sporidia uni- or biseriate, globose, perfectly even, ·0076-·01 m.m. (·0003-·0004 in.) diameter. Resembling at first *P. pustulata*.—*Batsch*

1986. *Peziza pustulata*. Pers. "Dingy *Peziza*."

Sessile, subglobose, pallid, somewhat dingy, externally whitish, mealy; margin entire; sporidia oblong-ovate; epispore granulose.—*Fr. S.M.* ii. p. 55. *Hedw. Mus. f. r. t. 6, f. A. Batsch. f. 157. Fckl. exs. no. 1227. Plicaria pustulata, Fckl. Sym. Myc. p. 327.*

On the ground. Rare. [Mid. Carolina.]

1987. *Peziza radula*. B. & Br. "Black warted *Peziza*."

Large, cup-shaped, sessile, at length depressed, externally black and rough with sub-equal warts, vinous-brown within; sporidia globose, tuberculate.—*B. & Br. Ann. N.H.* xviii. p. 77. *Berk. Outl. p. 364.*

On the ground in woods. Rare. Near Bristol.

Cup depressed, sessile, nearly an in. across, black externally, broken into nearly equal, distinct, sub-conical warts, like those of *Genea verrucosa*. Hymenium of a dark vinous brown; asci large, obtuse; sporidia large, globose, containing a single nucleus, rough with obtuse, distinct tubercles; paraphyses septate, with the ultimate articulation clavate.—*B. & Br.*

1988. *Peziza viridaria*. B. & Br. "Greenish *Peziza*."

Middle-sized; mycelium floccose, expanded, white; cups at first globose, then hemispherical, at length expanded, watery-grey, externally rough with brown furfuraceous particles; asci linear; sporidia widely elliptic.—*B. & Br. Ann. N.H.* no. 555. *Berk. Outl. p. 364.*

On damp walls and water butts. Rare. King's Cliffe.

Cups at first globose, then hemispherical, at length expanded, $\frac{1}{4}$ – $\frac{1}{2}$ in. broad, pale watery brown or cinereous, sessile, springing from a white cottony effused stratum.—*B. & Br.*

**** *Pruinosæ*.****1989. *Peziza carbonaria*. A. & S. "Charcoal *Peziza*."**

Globoso-campanulate, even, reddish-ochre, externally sub-pruinose; margin mealy or crenate.—*Fr. S.M.* ii. p. 64. *B. & Br. Ann. N.H.* (1865), no. 1063, t. 15, f. 15. *Rabh. F.E.* no. 622. *Gonn. & Rabh.* iii. t. 4, f. 4.

On burnt ground. Ascot.

Gregarious, thin, fragile, 3-8 lines broad, almost smooth, sometimes sessile, sometimes elongated into a slender stem; colour variable, more or less intense, when young almost vermilion internally; asci cylindrical, narrow; sporidia elliptic, smooth; paraphyses narrowly clavate.

Sporidia ellipsoid $\cdot 013\text{--}\cdot 017 \times \cdot 006\text{--}\cdot 009$ m.m.—*Nyl.*
 Sporidia ellipsoid $\cdot 013\text{--}\cdot 017 \times \cdot 006\text{--}\cdot 009$ m.m. ($\cdot 0005\text{--}\cdot 0006 \times \cdot 00023\text{--}\cdot 00035$ in.—*Karst.*
 Sporidia $\cdot 011$ m.m. broad, and twice as long. — *G. & R.*

1990. *Peziza cupularis.* L. "Scalloped *Peziza*."

Sub-sessile, thin, globoso-campanulate, fawn coloured, or pallid, externally farinose; margin crenate.—*Fr. S.M.* ii. p. 62. *B. & Br. Ann. N.H.* no. 308. *Vaill. t.* 11, f. 173. *Fckl. exs.* no. 1878. *Bull. t.* 596, f. 3. *Pers. Obs.* ii. t. 4, f. 6, 7. *Eng. Fl.* v. p. 189. *Gonn. & Rabh.* iii. t. 4, f. 1. *Pustularia cupularis*, *Fckl. Sym. Myc.* p. 328.

On the ground in gardens. [Low. & Mid. Carolina.]

Sometimes yellowish. Stem $\frac{1}{4}$ in. high, $\frac{1}{8}$ th in. thick, sometimes obsolete. Pileus pale buff, thin, transparent, scalloped at the edge, shaped like the cup of an acorn, about 1 in. in diameter.—*Withering.*

Sporidia ellipsoid, $\cdot 014\text{--}\cdot 02 \times \cdot 01\text{--}\cdot 012$ m.m. ($\cdot 0005\text{--}\cdot 0007 \times \cdot 0003$ in.)—*Karst.*

Sporidia $\cdot 01\text{--}\cdot 012$ m.m. broad, and about twice as long.—*G. & R.*

1991. *Peziza saniosa.* Schrad. "Brown-milky *Peziza*."

Sessile, concave, milky, purplish-brown, externally pulverulent, umber; asci linear; sporidia oval, with two nuclei.—*Fr. S.M.* ii. p. 65. *Schrad. Journ.* 1799, p. 64. *Berk. Mag. Zool. & Bot.* no. 87, t. 7, f. 2.

On ground overrun with *Thelephora sebacea*. Autumn. King's Cliffe.

1992. *Peziza argillacea.* Sow. "Clay *Peziza*."

Sessile, yellowish, even, at first urceolate, at length cracked and torn, rooting at the base, and hairy.—*Fr. S.M.* ii. p. 66. *Sow. t.* 148. *Eng. Fl.* v. p. 190.

On modelling clay.

Pileus 2 in. broad, held to the clay by very fine, attenuated, cobweb-like fibres from the sides, as it were, to assist the little knobby root.—*Sowerby.*

Observed only by Sowerby.

1993. *Peziza cornubiensis.* B. & Br. "Downy-base *Peziza*."

Middle sized, sessile, fixed by down; margin alone free, somewhat flattened, minutely villous externally; hymenium orange; asci sub-cylindrical; sporidia oblong, rather rough.—*Berk. Outl.* p. 366. *Ann. N.H.* no. 767.

On manured ground. Penzance.

Sessile, $\frac{3}{4}$ in. broad, depressed, attached to the soil by villous down; margin free, clothed with delicate, obtuse, articulate hairs; hymenium orange; sporidia ('0009-'0007 in.) '022-'0177 m.m. long.—*B. & Br.*

Sect. 4. Humaria—small, somewhat fleshy, margin sub-flocculose.

1994. *Peziza rutilans.* *Fr.* "Splendid *Peziza*."

Sub-sessile, middle-sized, campanulate, then expanded, externally finely pubescent, pallid; disc orange red; sporidia at length echinulate.—*Fr. S.M.* ii. p. 68. *Ray. Syn.* p. 19, no. 14. *Karst. exs.* no. 527. *Karst. Mon. Pez.* p. 116. *Fckl. exs.* no. 1222. *Eng. Fl.* v. p. 190. *Peziza humosa*, *B. & Br. Ann. N.H.* no. 768, t. 3, f. 13, no. 1154. *Berk. Eng. Fl.* v. p. 191. *Sow. t.* 369, f. 2. *Bolt. t.* 101, f. 1. *Purt. t.* 25. *P. leucoloma*, *Sturm. t.* 17.

On the ground.

[Mid. Carolina.]

Sporidia ('0009-'001 in.) '022-'025 m.m. long ('0004-'0005 in.) '01-'0125 m. broad when perfectly developed, strongly echinulate with one or more nuclei. Cups nearly $\frac{1}{2}$ in. broad, at first round, even, disciform, at length somewhat lobed and crisped, thick and fleshy, in vertical section obconic; margin pale, but not involute; disc of a full orange, externally paler, very minutely pulverulent. Sporidia rough with granules, '021-'027 \times '013-'016 m.m.—*Nyl. Karst.*

1995. *Peziza melaloma.* *A. & S.* "Black-edged *Peziza*."

Sessile, crowded, concave, then nearly plane, dingy-orange, margin furnished with very delicate black hairs; spores ellipsoid.—*A. & S. t.* 2, f. 5. *Fr. S.M.* ii. p. 69. *Eng. Fl.* v. p. 190. *Ann. N.H.* no. 88. *Karst. exs.* no. 550. *Karst. Mon. Pez.* p. 123. *Rabh. F.E.* no. 723. *Fckl. exs.* no. 1221. *Pyronema melalomum*. *Fckl. Sym. Myc.* p. 319.

On charcoal.

[Up. Carolina.]

Paraphyses numerous, thickened at their apices.

Sporidia ellipsoid, '014-'018 \times '008-'009 m.m.—*Nyl.*

Sporidia ellipsoid, '015-'018 \times '007-'009 m.m.—*Karst.*

1996. *Peziza erecta.* *Sow.* "Cylindrical *Peziza*."

Sessile, crowded, subcylindrical, smooth, yellowish, at length dilated, mouth erect, subciliate.—*Fr. S.M.* ii. p. 69. *Sow. t.* 369, f. 10, 11. *Eng. Fl.* v. p. 194.

On shaded ground.

Cup 2 lines high, oblong and upright, but sometimes short and clumsy, often spreading, sometimes destitute of hairs, sometimes ciliated, sometimes furnished with both hairs and cilia, varying from deep red to greenish yellow and pale yellow.—*Sowerby.*

1997. *Peziza polytrichi.* Schum. "Heath *Peziza*."

Subsessile, orbicular, somewhat concave, vermilion, externally paler, furnished with fasciculate flocci; sporidia sphaeroid.—*Fr. S.M.* ii. p. 70. *B. & Br. Ann. N.H.* no. 1156*. *Fl. Dan.* t. 1916, f. 1. *Karst. Mon. Pez.* p. 121. *Gonn. & Rabh.* t. 4, f. 3.

On heaths. Scotland.

Paraphyses clavate above, and orange-brown, granulose.

Sporidia sphaerical, at first finely granulated, '014-'016 m.m.—*Nyl. Karst.*

1998. *Peziza aggregata.* B. & Br. "Crowded *Peziza*."

Gregarious, confluent, obconical, orange, whitish tomentose at the base; hymenium concave; sporidia fusiform.—*B. & Br. Ann. N.H.* (1866), no. 1155.

On heathy ground. Berwick.

The peculiar crowded habit and fusiform sporidia ('0008 in.) '02 m.m. long by ('0003 in.) '007 m.m. wide, easily distinguish this species.

1999. *Peziza subhirsuta.* Schum. "Hirsute *Peziza*."

Sessile, gregarious, nearly plane, orange-yellow, paler beneath, clothed with a few scattered, almost obsolete, hairs; asci linear; sporidia smooth, elliptic, enucleate; paraphyses slightly clavate. *Fr. S.M.* ii. p. 70. *B. & Br. Ann. N.H.* (1866), no. 1156, t. 3, f. 14. *Fl. Dan.* t. 1787, f. 2. *Karst. Mon. Pez.* p. 123. *Desm. exs.* i. no. 462. *Fckl. exs.* no. 1220. *Pyronema subhirsutum.* *Fckl. Sym. Myc.* p. 320.

On the ground. Batheaston.

Sporidia ('0006 in. long), '014-'02 m.m. long, '08-'01 m.m. broad.

Sporidia ellipsoid '015-'02 \times '008-'01 m.m.—*Nyl*

Sporidia ellipsoid, '014-'02 \times '008-'01 m.m.—*Karst.*

2000. *Peziza leucoloma.* Reb. "White-edged *Peziza*."

Sessile, scattered, concave, then plane, red, margin minutely lacinate, white; sporidia ellipsoid.—*Fr. S.M.* ii. p. 71. *Hedw.* t. 4, f. A. *Nees.* f. 268. *Eng. Fl.* v. p. 191. *B. & Br. Ann. N.H.* no. 1156*, t. 3, f. 16, no. 768. *Karst. exs.* no. 537. *Karst. Mon. Pez.* p. 122. *Fckl. exs.* no. 1219. *Gonn. & Rabh.* iii. t. 4, f. 7. *Cooke exs.* no. 229. *Leucoloma Hedwigii.* *Fckl. Sym. Myc.* p. 317.

On the ground.

Sporidia ('0006-'0008 in.) '09-'013 m.m. long ('0004 in.) '08-'011 m.m. wide.—*Karst.*

Sporidia sphaerical, '011-'013 m.m. diameter.—*G. & R.*

2001. *Peziza humosa.* Fr. "Ground *Peziza*."

Sessile, fleshy, concave, then plane, smooth, blood-red, margin quite entire; sporidia variable in size; paraphyses highly developed, clavate at the tips, often furcate, or bearing curious processes at their side.—*Fr. S.M.* ii. p. 71. *Eng. Fl.* v. p. 191. *Fl. Dan.* t. 656, f. 2. *B. & Br. Ann. N.H.* no. 1156*, t. 3, f. 15. *Batsch. f.* 220? *Bolt. t.* 101, f. 1. *Sow. t.* 369, f. 2. *P. punicea.* *Purt. t.* 25. *P. Polytrichi.* *B. & Br. Ann. H.N.* no. 768, t. 16, f. 14*. *Crouania humosa.* *Fckl. Sym. Myc.* p. 320.

On the ground.

Sporidia ('0006-'001 in. long, by '0003-'0005 in. wide), '015-'025 m.m. long, by '007-'01 m.m. wide.

2002. *Peziza Wrightii.* Berk. & Curt. "Wright's *Peziza*."

Cups hemispherical, at length plane, carmine, externally furfuraceous, granulated; sporidia globose or subglobose, when young even, adult echinulate; paraphyses slender, branched.—*Ann. N.H.* 1865, no. 1064, t. xv. f. 16.

On trunks of trees, covered with *Hypnum serpens*. March. Bodelwyddan. [Texas, U.S.]

Sporidia ('00045-'0006 in.) '01-'015 m.m. diameter.

2003. *Peziza glumarum.* Desm. "Chaff *Peziza*."

Delicate, crowded, when young conico-globose, clad with white flocci, at length concave, somewhat flat, smooth, flexuous, orange-yellow, margin sublaciniate, whitish; asci cylindrical; sporidia ovate.—*Ann. Sc. Nat. ser.* ii. vol. xv. p. 129. *Desm. exs.* no. 1054, ii. no. 454. *B. & Br. Ann. N.H.* no. 768.

On chaff in a farm-yard. Dec. Batheaston.

Sporidia '016-'023 × '009-'011 m.m.—*Nyl.*

2004. *Peziza omphalodes.* Bull. "Charcoal *Peziza*."

Sessile, crowded, cups minute, nearly plane, sub-umbilicate, clothed with fugacious white down; asci clavate; sporidia elliptic.—*Fr. S.M.* ii. p. 75. *Bull. t.* 485, f. 1. *Gonn. & Rabh.* iii. t. 3, f. 6. *Fckl. exs.* no. 1218. *Cooke exs.* no. 326. *Rabh. F.E.* no. 268, 708. *Pers. Obs.* ii. t. 5, f. 6, 7. *Karst. exs.* no. 256. *Karst. Mon. Pez.* p. 120. *Desm. exs.* i. no. 428. *Thelephora carbonaria.* *Eng. Fl.* v. p. 169. *Pyronema marianum.* *Carus. Berk. Mag. Zool. & Bot.* no. 9. *Nov. Act. Curz.* xvii. t. 27. *Pyronema omphalodes.* *Fckl. Sym. Myc.* p. 39. *Pyronema confluens.* *Tul. Carp.* iii. p. 197.

On burnt soil.

[Mid. & Up. Carolina.]

Asci highly developed; paraphyses containing globose, orange-coloured granules.

Sporidia ellipsoid, $\cdot 011\text{--}\cdot 015 \times \cdot 007\text{--}\cdot 008$ m.m.—*Karst.*

Sporidia ellipsoid, $\cdot 011\text{--}\cdot 013 \times \cdot 007\text{--}\cdot 0085$ m.m.—*G. & R.*

2005. *Peziza granulata.* Bull. "Granulated Dung
Peziza."

Sessile, minute, nearly plane, orange-red, externally granulated with papillæ; asci clavate, obtuse; sporidia broadly elliptic; paraphyses orange-red; apices clavate.—*Fr. S.M.* ii. p. 67. *Ray. Syn. t.* 24, f. 2. *Vaill. t.* 15, f. 14. *Fl. Dan. t.* 655, f. 2. *Bull. t.* 438, f. 3. *Eng. Fl. v.* p. 190. *Desm. exs. no.* 270. *Ascobolus granulatus. Fckl. Sym. Myc. p.* 287.

On cow dung. Common.

[Mid. Carolina.]

Gregarious, at first globose, at length flat; orifice crenate, varying somewhat in colour, but generally of a clear orange-red, externally granulated from the projection of the cellular tissue, furfuraceous.—*Eng. Fl.*

Sporidia ellipsoid, $\cdot 014\text{--}\cdot 018 \times \cdot 007\text{--}\cdot 009$ m.m.—*Nyl.*

Sporidia ellipsoid, $\cdot 014\text{--}\cdot 018 \times \cdot 007\text{--}\cdot 009$ m.m. ($\cdot 0005\text{--}\cdot 0006 \times \cdot 00027\text{--}\cdot 00035$ in.)—*Karst.*

2006. *Peziza brunneo-atra.* Desm. "Brown Black
Peziza."

Sessile, solitary, nearly plane, entire, fleshy, fragile, smooth, brown-black; asci cylindrical; sporidia ovate, subhyaline, minutely echinulate.—*Ann. Sc. Nat.* (1836). vi. p. 244. *Desm. exs. no.* 826, ii. no. 26. *B. & Br. Ann. N.H.* (1866), no. 1157, t. 4, f. 18.

On the ground. Leigh wood.

Sporidia ($\cdot 0007\text{--}\cdot 0009$ in.) $\cdot 017\text{--}\cdot 023$ m.m. long.

Many modern authors include this with *Peziza bœdia*.

2007. *Peziza salmonicolor.* B. & Br. "Salmon-colour
Peziza."

Small, gregarious; cups sub-hemispherical, salmon-colour; asci oblong; sporidia biseriate, elliptic, enucleate.—*B. & Br. Ann. N.H.* (1866), no. 1158, t. 4, f. 19.

On the side of a ditch. Oct. Woodnewton.

Sporidia ($\cdot 0008$ in.), $\cdot 02$ m.m. long, sometimes ($\cdot 0005$ in.) $\cdot 0127$ m.m. broad; nearly allied to *P. hæmastigma*.

2008. *Peziza hæmastigma.* Fr. "Blood-red *Peziza*."

Sessile, convex, immarginate, smooth, pale blood-red; sporidia oblong, or nearly globose.—*Fr. S.M.* ii. p. 74. *Hedw. t.* 5, f. B.

B. & Br. Ann. N.H. (1866), no. 1159, t. 4, f. 20. *Sturm.* xxxiii. t. 11.

On cottage walls. Sept. N. Wales.

Asci short, oblong, subclavate; sporidia biseriate ($\cdot 0006$ by $\cdot 0009$ in.), $\cdot 015$ by $\cdot 022$ m.m. or nearly globose.—*B. & Br.*

Sect. 5. Encælia—more or less coriaceous.

2009. *Peziza fascicularis.* A. & S. "Crisped *Peziza*."

Cæspitose, sessile, membranaceous or coriaceous, irregular, rugose, blackish, externally rather mealy; sporidia cylindrical, oblong.—*Fr. S.M.* ii. p. 75. *Fckl. exs. no.* 1128. *Berk. exs. no.* 154. *A. & S. t.* 12, f. 2. *Eng. Fl.* v. p. 191. *Rabh. F.E. no.* 721. *Karst. exs. no.* 69. *Karst. Mon. Pez.* p. 129. *Dermatea fascicularis*, *Fckl. Sym. Myc.* p. 278. *P. crispa*, *Sow. t.* 425. f. 1, 2. *Purt. t.* 7.

On branches, bursting through the bark.

Cup 2-4 lines broad, generally in tufts resembling in form the convolutions of the human brain, but sometimes scattered and solitary, growing upon the bark, not upon the wood, beneath the epidermis.—*Eng. Fl.*

Sporidia oblong, curved, $\cdot 011\text{--}\cdot 016 \times \cdot 0035$ m.m.—*Nyl.*

Sporidia cylindrico-oblong, $\cdot 011\text{--}\cdot 016 \times \cdot 003$ m.m.—*Karst.*

2010. *Peziza furfuracea.* Fr. "Branny *Peziza*."

Sessile, between fleshy and coriaceous, externally pallid, mealy; margin involute, entire; disc cinnamon-blackish.—*Fr. S.M.* ii. p. 76. *Eng. Fl.* v. p. 192. *Roth.* ii. t. 9, f. 3. *Karst. exs. no.* 326. *Karst. Mon. Pez.* p. 129. *Fckl. exs. no.* 1842. *Rav. exs. vi. no.* 86. *Dermatea furfuracea*, *Fckl. Sym. Myc.* p. 278.

On alder branches.

Varying greatly in size from $1\frac{1}{2}$ lines to $\frac{1}{2}$ an in. broad.

Sporidia subcylindrical, curved, $\cdot 006\text{--}\cdot 01 \times \cdot 002$ m.m. ($\cdot 00023\text{--}\cdot 0003 \times \cdot 00007$ in.) with 2-5 nucleoli.—*Karst.*

2011. *Peziza fraxinicola.* B. & Br. "Ash-twigg *Peziza*."

Scattered or clustered; cups externally pale-fawn colour, furfuraceous, internally brown; hymenium slightly depressed; sporidia uniseriate, elliptic.—*B. & Br. Ann. N.H.* (1866), no. 1160, t. 4, f. 21.

On ash twigs. Northamptonshire.

Cups at first closed, then opening with an irregular aperture, at length orbicular, slightly depressed, pale fawn colour, and furfuraceous externally, umber-brown within; asci elongated, clavate; sporidia uniseriate, elliptic ($\cdot 00045$ in.) $\cdot 012$ m.m. long.—*B. & Br.*

Series 2. *Lachnea*, Fr.

Veil distinct, decidedly villous, or pilose, persistent; cup, in consequence, bristly or hairy, always closed when young; substance waxy, firm, rarely fleshy.—*Berk. Outl.* p. 367.

Fleshy, or between fleshy and waxy	. . .	<i>Sarcoscyphæ.</i>
Waxy, dry, externally villous	. . .	<i>Dasyscyphæ.</i> 68 ^d
Nestling on a dense mycelium	. . .	<i>Tapesia.</i> 69 ²
Externally fibroso-striate, with adpressed hairs	. . .	<i>Fibrina.</i> 69 ⁵

Sect. 1. Sarcoscyphæ—fleshy, or between fleshy & waxy.

2012. *Peziza coccinea.* Jacq. “Carminé Peziza.”

Cup infundibuliform, externally, as well as the stem, whitish, tomentose, with short, adpressed down; disc carmine; sporidia oblong.—*Fr. S.M.* ii. p. 79. *Jacq. Austr. t.* 169. *Eng. Fl.* v. p. 192. *Bolt. t.* 104. *Fckl. exs. no.* 1213. *Buxb. iv. t.* 29, f. 4. *Nees. f.* 288. *Batt. t.* 3, f. N.O. *Ray. Syn.* iii. p. 19, no. 15. *Grev. t.* 161. *P. epidendra, Bull. t.* 469. *Sow. t.* 13. *P. poculiformis, Hoffm. Cr. t.* 7, f. 5. *Gonn. & Rabh. iii. t.* 4, f. 5. *Plectania coccinea, Fckl. Sym. Myc. p.* 324.

On sticks. Spring. Local. [Up. Carolina.]

Cup 1 in. or more broad, deep carmine within; stem $\frac{1}{2}$ -1 in. high. Sporidia ellipsoid-oblong, .028-.038 \times .011-.014 m.m.—*Nyl. Karst.* Sporidia .012-.014 m.m. broad, and about twice as long.—*G. & R.*

2013. *Peziza melastoma.* Sow. “Black and red Peziza.”

Cup fleshy; disc urceolate, black, externally brick-red flocculose; stem short, rooting by means of thick black, strigose down.—*Fr. S.M.* ii. p. 80. *Sow. t.* 149. *Eng. Fl.* v. p. 192. *Fckl. exs. no.* 1214, 1215. *A. & S. t.* 1, f. 4. *P. atro rufa. Grev. t.* 315. *Plectania melastoma, Fckl. Sym. Myc. p.* 324.

On sticks lying on the ground. Rare.

This species varies greatly as to degree of pubescence, being sometimes almost naked, sometimes beset with down, or even bristly hairs; the base, however, is always furnished with long, black, rooting, strigose filaments.—*Eng. Fl.*

Asci very long, stipitate; sporidia oblong, hyaline.—*Fckl.*

2014. *Peziza pygmea.* Fr. “Furze Peziza.”

Cup concave, at length plane, orange externally, as well as the somewhat thickened stem, tomentose, pallid; sporidia small, fusiform, without nuclei.—*Fr. S.M.* ii. p. 79. *B. & Br. Ann. N.H.* (1865), no. 1066, t. 15, f. 18, no. 1160*, t. 4, f. 22.

On dead twigs of *Ulex*, buried in the sandy soil. Nov. Ascot.

Cup 3·6 lines broad. The stem varies in length according to the depth at which the twig is buried. Sporidia uniseriate, linear-oblong (·0005-·0006 in.) long; about $\frac{1}{4}$ in. high when full grown, stipitate, the stem branching out or dividing into several heads, which form cups. The cups are often proliferous, producing smaller cups on their surface, of a bright apricot colour, but whitish towards the margin.—*B. & Br.*

2015. *Peziza radiculata.* Sow. "Rooting Peziza."

Subcæspitose, fleshy, sessile, hemispherical, then expanded; disc sulphureous externally, as well as the thick root, white, villous.—*Fr. S.M.* ii. p. 81. *Sow.* t. 114. *Eng. Fl.* v. p. 192. *B. & Br. Ann. N.H.* (1866), no. 1160*, t. 4, f. 23. *Rabh. exs.* no. 618.

In fir wood. Jedburgh.

Sporidia (·0005 in.) ·0127 m.m. long, rather broad, binucleate.—*B. & Br.*

Somewhat reticulated externally, with irregular prominent veins, 1 in. or more broad.—*Eng. Fl.*

2016. *Peziza hemispherica.* Wigg. "Hemispherical Peziza."

Sessile, hemispherical, waxy, externally brownish, clothed with dense, fasciculate hairs; disc glaucous-white.—*Fr. S.M.* ii. p. 84. *Fckl. exs.* no. 1211. *Eng. Fl.* v. p. 193. *Mich.* t. 86, f. 4. *Bull.* t. 204, 396, f. 2. *Fl. Dan.* t. 1558, f. 2, 656, f. 1. *Hedw.* ii. t. 4, f. B. *Schæff.* t. 151, t. 319. *Hoffm. Cr.* ii. t. 7, f. 6. *P. hispida*, *Sow.* t. 147. *P. hirsuta* *Holms.* ii. t. 19. *Humaria hemisphærica*, *Fckl. Sym. Myc.* p. 322.

On the ground.

[Mid. & Up. Carolina.]

Cup 2 lines—1 in. broad, varying much in colour.

Sporidia ellipsoid ·023-·026 \times ·011-·013 m.m.—*Nyl. Karst.*

2017. *Peziza lanuginosa.* Bull. "Woolly Peziza."

Cup broad, thin, waxy, fragile, sessile, ferruginous beneath, woolly, of a greyish-white within, cup-shaped; sporidia shortly and bluntly fusiform.—*Bull.* t. 396, f. 2.

var. Sumneri. Cup at length radiato-fissured; margin when young narrow, naked.—*B. & Br. Ann. N.H.* (1866) no. 1161, t. 4, f. 25.

Under cedars and larch. Jan.—May.

A large and magnificent species, acquiring frequently a diameter of 2 in. and combining in some measure the characters of *P. sepulta* and *P. hemispherica*, from both of which it differs in the subfusiform fruit. In plants which are just open a delicate veil is often found stretched over the orifice.

At first entirely buried, then forcing its way through the soil, and splitting into several lobes, like a *Geaster*, which it much resembles from its thick substance. The outer coat is densely clothed with flexuous hairs, the sporidia are shortly and bluntly fusiform.—*B. & Br.*

2018. *Peziza geaster.* *B. & Br.* "Starry *Peziza*."

Brown; cup sub-globose, floccose, at length fissured in a radiate manner; asci linear; sporidia elliptic; paraphyses clavate.—*B. & Br. Ann. N.H.* (1866), no. 956 and 1162, t. 4, f. 26 (not *Gonn. & Rabh.* iii. t. 3, f. 5.)

On the ground. Oct. Wentworth.

About an in. across; hairs flexuous, branched, articulated, often giving out little curved, hyaline processes, with a few straight bristles intermixed. Hymenium brown; paraphyses clavate; sporidia elliptic, with the ends very slightly attenuated ('0009 in.) '022 m.m. long.—*B. & Br.*

At first referred in error to *Geopyxis*.—*Ann. N.H.* no. 956.

2019. *Peziza sepulta.* *Fr.* "Broken *Peziza*."

Hypogæous, globose, clothed with dense woolly fibres; hymenium at length exposed by the rupture of the upper portion; asci cylindrical; sporidia elliptic, with one, two, or sometimes several nuclei.—*Fr. M.SS. Ann. N.H.* no. 766. *Berk. Outl.* p. 365.

On the ground. Nov. East Bergholt.

One or two in. across, the upper portion often breaking off irregularly, and so exposing the disc.—This is a far coarser species than *P. Geaster*. Sporidia ('0009 in. by '0004 in.) '022 × '01 m.m.—*B. & Br.*

2020. *Peziza brunnea.* *A. & S.* "Brown *Peziza*."

Sessile, hemispherical, then depressed, sub-flexuose, brown, externally hairy, with short fasciculate hairs.—*Fr. S.M.* ii. p. 85. *A. & S. t.* 9, f. 8. *Eng. Fl.* v. p. 193. *Sturm.* ii. t. 28? *Fckl. exs.* 1217. *P. hybrida.* *Sow. t.* 369, f. 1. *Humaria brunnea.* *Fckl. Sym. Myc.* p. 323.

On the ground.

[Mid. Carolina.]

Cups 1-3 lines broad, often flexuous by reason of the dense mode of growth, when young subglobose, but soon more expanded and depressed, hairs less distinct, scarcely ciliating.—*Fries.*

Sporidia sphaerical, '013-017 m.m.—*Nyl. Karst.*

2021. *Peziza hirta.* *Sch.* "Hairy brown *Peziza*."

Sessile subhemispherical, externally brown, hairy, margin somewhat inflexed, internally scarlet; sporidia elliptic, smooth.—*Fr. S.M.* ii. p. 84. *Mich. t.* 96, f. 14. *B. & Br. Ann. N.H.* no. 557, 768. *P. umbrosa.* *Rabh. exs.* no. 1011.

On the ground.

Sporidia (·0009 in.) ·022 m.m. long, by (·0005 in.) ·0127 m.m. wide. Other specimens ·0006 by ·0003 in. Differing from *P. trechispora* in its smooth elliptic sporidia.

**2022. *Peziza trechispora.* *B. & Br.* “Rough-spored
Peziza.”**

Depressed, nearly plane, orange-red, externally clothed with pallid, tawny bristles; sporidia globose, echinulate.—*B. & Br. Ann. N.H.* xviii. p. 77. *Cooke exs. no.* 288.

On naked ground in woods, or wet banks of rivulets. King's Cliffe. Bristol, &c.

Cup $\frac{1}{2}$ in. or more broad, depressed or slightly concave, orange, paler externally, and clothed with rather rigid tawny bristles; asci elongated; sporidia globose (·0008 in.) ·02 m.m. diameter, sharply tuberculate. Paraphyses very slender, linear. Resembles *P. scutellata*, though distinguished at once by its very different sporidia.—*M. J. B.*

2023. *Peziza vitellina.* *Pers.* “Egg yellow *Peziza*.”

Subcaespitose, large, flexuose, bright yellow, margin setose.—*Fr. S.M.* ii. p. 84. *Pers. M.E.* p. 257. *Eng. Fl.* v. p. 193. *B. & Br. Ann. N.H.* (1866), no. 1163*, t. 4, f. 29.

On the ground. Autumn. Appin, Wareham.

Sporidia (·0009 in.) ·022 m.m. long, by (·0005 in.) ·0127 m.m.

2024. *Peziza umbrata.* *Fr.* “Shady *Peziza*.”

Depressed, nearly plane, flesh-coloured or vermillion, clothed externally with short bay bristles; sporidia subglobose, minutely echinulate.—*Fr. S.V.S.* p. 351. *P. umbrosa.* *Fr. S.M.* ii. p. 85. *Mich. t.* 86, f. 19. *B. & Br. Ann. N.H.* (1866), no. 1163, t. 4, f. 28. *Rabh. F.E.* no. 217. *Humaria umbrorum.* *Fckl. Sym. Myc.* p. 322.

On the ground. Berwick.

Sporidia (·0008 in.) ·02 m.m. long (·0007 in.) ·0177 m.m. wide. Paraphyses clavate.

Sporidia ellipsoid, ·014·018 × ·01·012 m.m.—*Karst.*

2025. *Peziza scutellata.* *L.* “Shield-like *Peziza*.”

Becoming plane, vermillion-red, externally paler, hispid towards the margin with straight black hairs.—*Fr. S.M.* ii. p. 85. *Ray. Syn. ed.* 2, p. 29, no. 41. *Fckl. exs. no.* 1210. *Sow. t.* 24. *Bull. t.* 10. *Fl. Dan. t.* 1457, f. 2. *Schæff. t.* 284. *Eng. Fl.* v. p. 193. *B. & Br. Ann. N.H.* no. 768. *P. ciliata.* *Hoffm. Cr.* ii. t. 7,

f. 5. Holms. ii. t. 18. Hedw. t. 3, f. B. Humaria scutellata. Fckl. Sym. Myc. p. 321.

On stumps, &c.

[United States.]

Sporidia (·0008 in.) ·02 m.m. long, by (·0005 in.) ·0127 m.m. wide. Cups 3 lines broad.

Sporidia ellipsoid, ·018·024 × ·010·014 m.m.—*Nyl.*

Sporidia ellipsoid, ·017·024 × ·010·014 m.m.—*Karst.*

2026. *Peziza cœrulea.* Bolt. "Blue *Peziza*."

Soon becoming plane, ciliate, externally blackish, hairs pallid; disc cœrulean blue.—*Fr. S.M. ii. p. 86. Eng. Fl. v. p. 193. Bolt. t. 108, f. 2.*

On trunks of firs. Oct. Near Halifax.

About 2 lines broad.

2027. *Peziza livida.* Sch. "Livid *Peziza*."

Hemispherical, becoming plane, internally livid-glaucous, externally dingy, clothed with long strigose hairs.—*Fr. S.M. ii. p. 86. Batsch. f. 154. Ann. N.H. no. 558. Fl. Dan. t. 1915, f. 3. Humaria livida. Fckl. Sym. Myc. p. 322.*

On fir chips. Lockerbie.

A beautiful species with the habit of *P. scutellata*, but with a livid disc, and more convex.—*B. & Br.*

2028. *Peziza stercorea.* Pers. "Red dung *Peziza*."

Gregarious, concave, dingy-red, beset near the margin, with nearly straight brown hairs, ciliated.—*Fr. S.M. ii. p. 87. Eng. Fl. v. p. 194. Ray. Syn. t. 24, f. 3. P. equina. Fl. Dan. t. 779, f. 3. Sow. t. 552. Hedw. t. 3, f. A. P. scutellata. Bolt. t. 108, f. 1. Bull. t. 438, f. 2. Humaria stercorea. Fckl. Sym. Myc. p. 321.*

On cow dung. Common.

[Mid. Carolina.]

Paraphyses simple, not capitate as in *P. granulata*, which frequently accompanies it; setæ jointed, yellowish, or greenish in decay, 1-2 lines broad.—*Eng. Fl.*

Sporidia ellipsoid, ·016·022 × ·009·01 m.m.—*Nyl. Karst.*

2029. *Peziza theleboloides.* A. & S. "Hop *Peziza*."

Spherical, then tub-shaped, whitish, mouth concave, dingy-yellowish, externally hispid, with pallid hairs; asci linear; sporidia elliptic.—*Fr. S.M. ii. p. 88. A. & S. t. 12, f. 4. Ann. N.H. no. 1065, t. 15, f. 17.*

On spent hops.

[Mid. Carolina.]

Cup at first obovate or subcylindrical, concave, and expanded, when mature, of a bright orange colour within, beset externally with delicate, erect, white hairs, which are hyaline under the microscope, and seated at first on a delicate white subiculum, which disappears as the plant advances to maturity, and the cups become crowded. Sporidia ($\cdot 0005$ in.) $\cdot 0127$ m.m. long ($\cdot 00025$ in.) $\cdot 065$ m.m. wide.—*B. & Br.*

2030. *Peziza albo-spadicea.* Grev. "Red-brown and white *Peziza*."

Sessile, gregarious, globose, at length quite plane; external surface, and margin strigose, with reddish-brown hairs; hymenium white.—*Grev. Fl. Ed. p. 420. Eng. Fl. v. p. 194.*

On the ground.

About 2 lines broad, globose when young, gradually becoming plane. Hymenium white, smooth, with a slight tinge of grey in moist weather; externally covered with reddish-brown hairs, which form also a border to the hymenium.—*Grev.*

Sect. 2. *Dasyscyphæ.* Waxy, dry, externally villous.

2031. *Peziza ciliaris.* Schrad. "Fringed white *Peziza*."

Stipitate, cyathiform, snow-white, externally beset with long scattered hairs.—*Schrad. Journ. p. 65. Fr. S.M. ii. p. 89. Fckl. exs. no. 1209. Ann. N.H. no. 559. Hyalopeziza ciliaris. Fckl. Sym. Myc. p. 298.*

On dead oak leaves.

[Mid. Carolina.]

Asci oblong, stipitate; sporidia fusiform, straight or curved, hyaline.—*Fckl.*

2032. *Peziza virginea.* Batsch. "Virgin white *Peziza*."

Stipitate, white, cup hemispherical, externally beset with crowded patent hairs.—*Fr. S.M. ii. p. 90. Fckl. exs. no. 1208. Eng. Fl. v. p. 194. Mich. t. 36, f. 15. Bull. t. 376, f. 3. Fl. Dan. t. 1016, f. 4. Holms. ii. t. 14. P. nivea. Sow. t. 55. Gonn. & Rabh. iii. t. 5, f. 10. Dasyscypha virginea. Fckl. Sym. Myc. p. 305.*

On stumps, twigs, &c. Common.

[Low. & Mid. Carolina.]

Gregarious; cup 1 line high, externally pilose, the margin ciliate, and often studded with dew drops.—*Eng. Fl.*

Sporidia fusiform, $\cdot 006\text{--}\cdot 01 \times \cdot 002\text{--}\cdot 0025$ m.m.—*Nyl.*

Sporidia elongated-fusoid, straight, $\cdot 005\text{--}\cdot 01 \times \cdot 0015\text{--}\cdot 0025$ m.m.—*Karst.*

Sporidia fusiform, $\cdot 002\text{--}\cdot 0027$ m.m. broad, and 3-4 times as long.—*G. & R.*

2033. *Peziza nivea*. Fr. "Snowy *Peziza*."

Stipitate, white; cup turbinate, externally villosa-tomentose.—*Fr. S.M.* ii. p. 90. *Eng. Fl.* v. 195. *Hedw. t.* 8, f. B. *Fl. Dan. t.* 1440, f. 2. *Bull. t.* 416, f. 5. *Fckl. exs. no.* 1199. *Rav. exs. vi. no.* 80. *Peziza Aspidii*, *Fckl. exs. no.* 1193. *Trichopeziza nivea*, *Fckl. Sym. Myc. p.* 296.

On stumps, &c.

[Low. Carolina.]

Differs from *P. virginia* in the nature of the down; stem less distinct, incrassated upwards, villous; cup less expanded.—*Fries.*

Sporidia fusiform, $\cdot 005\text{--}\cdot 007 \times \cdot 0015$ m.m.—*Nyl.*

Sporidia straight or curved, $\cdot 005\text{--}\cdot 012 \times \cdot 0015$ m.m.—*Karst.*

2034. *Peziza calycina*. Schum. "White and orange *Peziza*."

Stipitate, erumpent, funnel-shaped, externally whitish, villous; disc nearly plane, inclining to orange.—*Fr. S.M.* ii. p. 91. *Fckl. exs. no.* 1206. *Batsch. f.* 135. *Hedw. t.* 22. *Berk. exs. no.* 261. *Eng. Fl.* v. 195. *Dasyscypha calycina*, *Fckl. Sym. Myc. p.* 305. *Rav. exs. vi. no.* 83.

On bark of firs. Scotland. [Low. & Mid. Carolina.]

var. β. abietis. When fresh of a golden egg-yellow; stem blackish at the base.

On Scotch fir. Appin.

var. γ. laricis.

On larch boughs. Scotland.

Cup 1-2 lines broad, varying greatly in colour, and in the length of the stem, often fasciculate.—*Eng. Fl.*

Sporidia fusiform-oblong, $\cdot 005\text{--}\cdot 009 \times \cdot 002\text{--}\cdot 003$ m.m.—*Nyl.*

Sporidia fusoid $\cdot 005\text{--}\cdot 009 \times \cdot 001\text{--}\cdot 002$ m.m.—*Karst.*

2035. *Peziza bicolor*. Bull. "Two-coloured *Peziza*."

Subsessile, globose, tomentose, white; disc inclining to orange; sporidia cylindrical, straight.—*Fr. S.M.* ii. p. 92. *Eng. Fl.* v. p. 195. *Fl. Dan. t.* 779, f. 2. *Bull. t.* 410, f. 3. *Sow. t.* 17. *Ayres. exs. no.* 55. *Fckl. exs. no.* 1205. *Berk. exs. no.* 155. *Dasyscypha bicolor*, *Fckl. Sym. Myc. p.* 305.

On dead twigs.

Nylander and Karsten unites this with *P. calycina*.

2036. *Peziza cerina*. P. "Wax-coloured *Peziza*."

Hemispherical, villose or furfuraceous, yellowish-olive; disc concave, yellow.—*Fr. S.M.* ii. p. 92. *Eng. Fl.* v. p. 195. *Holms.*

ii. t. 20. *Nees.f.* 283. *Moug. exs. no.* 687. *Fl. Dan. t.* 1620, lower fig. *Fckl. exs. no.* 1204. *Dasyscypha cerinea*, *Fckl. Sym. Myc. p.* 305.

On old rails, branches, &c.

[Mid. Carolina.]

Scattered or gregarious; cup closed when dry, clothed with yellow, branny pubescence; stem short or obsolete.—*Eng Fl.*

Sporidia oblong-fusiform, minute, $\cdot 005\text{--}\cdot 007 \times \cdot 002\text{--}\cdot 0025$ m.m.—*Nyl.*

Sporidia oblong or elongated, fusoid, $\cdot 004\text{--}\cdot 007 \times \cdot 002\text{--}\cdot 0025$ m.m.—*Karst.*

2037. *Peziza calyculæformis.* Schum. “Wine-glass *Peziza*.”

Subinfundibuliform, umber-brown; margin erect, externally villous, as well as the very short, rather thick stem.—*Fr. S.M. ii. p.* 94. *B. & Br. Ann. N.H. (1866), no.* 959, 1164. *Fl. Dan. t.* 2032, f. 2.

On dead wood. May. Twycross.

“Our plant agrees with Schumacher’s in habitat; it is not, however, scattered in growth. It has a decidedly dark-brown stem, which is smooth; and the margin is rather connivent than erect.”—*B. & Br.*

Sporidia biseriate $\cdot 01\text{--}\cdot 012 \times \cdot 002$ m.m.—*Karst.*

2038. *Peziza clandestina.* Bull. “Brownish *Peziza*.”

Stipitate, turbinate, fawn-coloured, externally furfuraceous-villose; disc pallid.—*Fr. S.M. ii. p.* 94. *Eng. Fl. v. p.* 195. *Johnst. F.B. ii. p.* 150. *Fckl. exs. no.* 1202. *Dasyscypha clandestina*, *Fckl. Sym. Myc. p.* 305.

On dead bramble.

[Low. & Mid. Carolina.]

Sporidia oblong-fusiform, $\cdot 005\text{--}\cdot 007 \times \cdot 0015$ m.m.—*Nyl.*

Sporidia elongato-fusoid, $\cdot 005\text{--}\cdot 008 \times \cdot 0015$ m.m.—*Karst.*

2039. *Peziza caulicola.* Fr. “Herbaceous *Peziza*.”

Yellowish-brown, pallid; cup between turbinate and globose, farinoso-pubescent; stem short, firm, smooth.—*Fr. S.M. ii. p.* 94. *Ann. N. Hist. no.* 310. *Fckl. exs. no.* 1200.

On dead herbaceous stems.

Minute, gregarious, rather firm, persistent, at length becoming smooth. Colour pale, dirty, opaque, yellowish-pallid, umber, &c.

Sporidia fusiform, $\cdot 006\text{--}\cdot 009 \times \cdot 0015\text{--}\cdot 002$ m.m.—*Nyl.*

Sporidia elongated, $\cdot 006\text{--}\cdot 009 \times \cdot 0015\text{--}\cdot 002$ m.m.—*Karst.*

PEZIZA ACUUM. Fr. See *Helotium acuum*.

2040. *Peziza albo-violascens.* A. & S. “Proliferous *Peziza*.”

Subsessile, becoming plane, firm, villous, hairy, generally closed; disc pallid.—*Fr. S.M. ii. p.* 96. *Eng. Fl. v. p.* 196. *A. & S. t.* 8, f. 4. *Lachnella albo-violascens*, *Fckl. Sym. Myc. p.* 380.

On lilac, &c.

[United States.]

Remarkable for the deep black flesh beneath the generally proliferous hymenium, occasionally, when the villosity has vanished, the cup is also black externally.—*Eng Fl.*

Sporidia subovoid, unequilateral $\cdot 011 \cdot 016 \times \cdot 009 \cdot 012$ m.m.—*Karst.*

2041. *Peziza corticalis.* Pers. "Bark *Peziza*."

Sessile, sub-globose, firm, flocculoso-tomentose, cinereous, then rufescent.—*Fr. S.M.* ii. p. 96. *Pers. M.E.* p. 267. *Ann. N.H.* no. 311-562. *Fckl. exs.* no. 1120. *Lachnella corticalis*, *Fckl. Sym. Myc.* p. 280.

On dead bark.

[Mid. Carolina.]

Gregarious, persistent, superficial; disc open when moist, hemispherical, reddish; when dry closed, irregular and whitish-grey.

Sporidia fusiform (spuriously uniseptate) $\cdot 017 \cdot 027 \times \cdot 004 \cdot 005$ m.m.—*Nyl.*

Sporidia straight or slightly curved $\cdot 015 \cdot 027 \times \cdot 004 \cdot 005$ m.m.—*Karst.*

2042. *Peziza tricolor.* Sow. "Tricolor *Peziza*."

Hemispherical, marginate; disc yellowish, externally greyish; stem very short, nearly white.—*Sow. t.* 369, f. 6. *Fr. S.M.* ii. p. 134. *Eng. Fl.* v. p. 204. *Berk. Outl.* p. 368. *Peziza Godroniana* *Mont. Syll.* p. 185. *Berk. Outl.* p. 368—p. xvii.

On bark.

2043. *Peziza melaxantha.* Fr. "Black and Yellow *Peziza*."

Sessile, minute, externally farinaceo-villose, greyish-yellow; disc rather concave, black.—*Fr. S.M.* ii. p. 97. *Eng. Fl.* v. p. 196.

On fallen branches. Appin.

Gregarious, very minute. At first globose, greyish-yellow, at length quite flat, border sometimes flexuous in crowded specimens.—*Eng. Fl.*

2044. *Peziza hispidula.* Schrad. "Black hispid *Peziza*."

Sessile, rather fleshy, slightly hispid, black; disc concave, whitish.—*Fr. S.M.* ii. p. 98. *Schrad. Journ. Bot.* 1799, p. 64. *Eng. Fl.* v. p. 196.

On dead wood. Appin.

Cup sub-carnose, $1-1\frac{1}{2}$ line broad, beset with black shining hairs.—*Fries.*

2045. *Peziza Schumacheri.* Fr. "Schumacher's *Peziza*."

Sessile, small, hemispherical, tomentose, brown; disc nearly plane, purplish-brown.—*Fr. S.M.* ii. p. 98. *Eng. Fl.* v. p. 196.

var. β. plumbea. Disc lead coloured.—*Grev. t. 11. Fl. Dan. t. 1786, f. 1.*

On dead wood.

Often much resembling *P. cinerea*.

**2046. *Peziza rufo-olivacea.* A. & S. "Brown and olive
Peziza."**

Sessile, becoming plane, externally villosa-pulverulent, dingy ferruginous-red; disc greenish-olive (at length black).—*Fr. S.M. ii. p. 99. A. & S. t. 11, f. 4. Eng. Fl. v. p. 197. Fckl. exs. no. 1192. Velutaria rufo-olivacea. Fckl. Sym. Myc. p. 300.*

On dead bramble. Appin. [Mid. Carolina.]

Sporidia elliptical, uniseriate, binucleate ('0005 in.) '0127 m.m., large for the size of the plant.—*E.C.*

2047. *Peziza diplocarpa.* Curr. "Double fruited *Peziza*."

Cups rather flat, stipitate, externally vinous-brown, clothed (as well as the stem) with dense short hairs; margin slightly inflexed, fimbriate; disc waxy, sub-glaucous, greenish-olive; sporidia elliptical, nucleate; paraphyses filiform, apices clavate-acuminate, 2-4 septate.—*Curr. Linn. Trans. xxiv. p. 153, t. 25, f. 30-33.*

On the ground. Nov. Joyden's wood, Dartford.

Cups $\frac{1}{2}$ in. wide, margin slightly inflexed and surrounded by a ring of hairs of a pale amber, forming a marked contrast in colour with the reddish brown outer hairs; disc waxy, somewhat glaucous, of a greenish olive colour; sporidia elliptical, with a nucleus at each extremity, usually slightly narrowed at each end, '0076 m.m. ('0003 in.) long; paraphyses filiform, terminating in spore-like bodies, the latter 2-4 septate, acuminate at the apex, and tapering to the junction with the filament, varying much in length, from '0008 to '0018 in. Allied to *P. rufo-olivacea*.—*A. & S.*

2048. *Peziza varicolor.* Fr. "Various-coloured *Peziza*."

Sessile, hemispherical, orbicular, rather firm, flocculoso-villose; disc urceolate, white, becoming pallid.—*Fr. S.M. ii. p. 100. Eng. Fl. v. p. 197. P. albo-lutea. Pers. Ic. & Des. t. 8, f. 4-5. P. hydnoidea. Sow. t. 178. Tapesia varicolor. Fckl. Sym. Myc. p. 302.*

On rotten wood.

[Mid. Carolina.]

Gregarious, sessile, but not adnate; when young or dry closed, granuliform, when moistened soon expanded; disc concave, of a peculiar pallid hue, margin often granulated with flocci.—*Fries.*

Sporidia oblong, '007-'011 \times '002-'003 m.m.—*Nyl. Karst.*

2049. *Peziza epispæria.* Mart. "Parasitic *Peziza*."

Sessile, becoming plane, externally white, beset with long ciliato-pilose hairs; disc pale yellowish.—*Fr. S.M.* ii. p. 100. *Eng. Fl.* v. p. 197.

On *Hypoxylon multiforme*, &c.

2050. *Peziza pineti.* Batsch. "Fir-cone *Peziza*."

Sessile, adnate, nearly plane, firm, subvillose, whitish-brown; disc pallid white.—*Fr. S.M.* ii. p. 101. *Eng. Fl.* v. p. 197. *Batsch.f.* 140. *Fckl. exs. no.* 1167. *Pseudohelotium pineti.* *Fckl. Sym. Myc.* p. 298.

On fir cones. Autumn.

Sporidia minute, fusiform.—*Nyl.*

Sporidia oblong-fusiform, $\cdot 008\text{--}\cdot 014 \times \cdot 003$ m.m.—*Karst.*

2051. *Peziza papillaris.* Bull. "Papillose *Peziza*."

Sessile, free, concave, villose, hairy, entirely milk-white; margin granulated.—*Fr. S.M.* ii. p. 102. *Eng. Fl.* v. p. 197. *Bull. t.* 467, f. 1. *Sow. t.* 177.

On dead wood.

Gregarious, thick set, not adnate, waxy, rather firm, scarce 1 line broad, regular, margin entire, denticulated, closed when dry, granuliform, persistent, so slightly tinged with yellow that it can scarcely be called straw-coloured.—*Fries.*

Sporidia fusiform, simple, $\cdot 01\text{--}\cdot 015 \times \cdot 0025$ m.m.—*Nyl.*

Sporidia subfusiform, $\cdot 009\text{--}\cdot 015 \times \cdot 002\text{--}\cdot 003$ m.m.—*Karst.*

2052. *Peziza hyalina.* Pers. "Hyaline *Peziza*."

Sessile, punctiform, subglobose, when moist pellucid, externally rather pilose.—*Fr. S.M.* ii. p. 102. *Eng. Fl.* v. p. 198. *Pseudohelotium hyalinum.* *Fckl. Sym. Myc.* p. 298.

On stumps of trees. Winter. [Mid. Carolina.]

Gregarious, extremely minute, very thin, soft, often irregular, white, at length turning yellowish in patches. When dry it resembles minute grains of white sand scattered over the bark.—*M. J. B.*

Sporidia oblong or fusiform-ellipsoid, $\cdot 005\text{--}\cdot 009 \times \cdot 002\text{--}\cdot 0025$ m.m.—*Nyl.*

Sporidia straight or slightly curved, $\cdot 004\text{--}\cdot 009 \times \cdot 002\text{--}\cdot 0025$ m.m.—*Karst.*

2053. *Peziza sulphurea.* Pers. "Sulphur *Peziza*."

Sessile, subglobose, strigoso-tomentose, sulphur-coloured; disc pallid.—*Fr. S.M.* ii. p. 104. *Eng. Fl.* v. p. 198. *Pers. M.E.* p. 250. *Fckl. exs. no.* 1196. *Berk. exs. no.* 156. *Grev. t.* 83. *P. hydnoidea.* *Purt. no.* 1049. *Trichopeziza sulphurea.* *Fckl. Sym. Myc.* p. 296.

On dead nettles, &c. Spring. [Mid. Carolina.]

Often brown when dry.

Sporidia fusiform, simple, or at length spuriously 1-3 septate, $\cdot 014\text{--}\cdot 024 \times \cdot 002\text{--}\cdot 0025$ m.m.—*Nyl.*

Sporidia filiform-fusoid $\cdot 012\text{--}\cdot 024 \times \cdot 0015\text{--}\cdot 0025$ m.m.—*Karst.*

2054. *Peziza plano-umbilicata.* Grev. "Umbilicate *Peziza*."

Small, sessile, gregarious, whole plant white, globoso-concave, at length quite plane, ciliate with horizontal white hairs at the margin; hymenium gently umbilicated.—*Grev. Fl. Ed. p. 420. Eng. Fl. v. p. 198.*

On dead nettles.

Wholly white, remarkably plane, with a small dimple in the centre of the hymenium, which, in old age, assumes a yellowish tinge. The external surface is covered with white hairs, which form a beautiful ciliated margin, not in the least raised. The margin is so regular, that if there had been fewer cilia it might have been called pectinate.—*Grev.*

2055. *Peziza villosa.* Pers. "Villous *Peziza*."

Sessile, minute, persistent, globose, villous, white, mouth somewhat connivent.—*Fr. S.M. ii. p. 104. Eng. Fl. v. p. 198. Rabh. exs. no. 225. Schmidt. exs. no. 48. Fckl. exs. no. 2286. P. sessilis. Sow. t. 389, f. 1. Nees. f. 283 var. Trichopeziza villosa. Fckl. Sym. Myc. p. 296.*

On large herbaceous plants, Burdock, &c. Common.

[United States.]

Open only in wet weather; cups $\frac{1}{4}\text{--}\frac{1}{2}$ a line broad, scattered or much crowded.—*Eng. Fl.*

2056. *Peziza Grevillei.* Berk. "Greville's *Peziza*."

Sessile, gregarious, very minute, cups farinoso-tomentose (sub-hirsute), pale-umber.—*Eng. Fl. v. p. 198. P. nidulus. Grev. Fl. Ed. p. 420. Johnst. Fl. Berw. ii. p. 149.*

On dead *Umbelliferae*.

2057. *Peziza Berkeleyi.* Blw. "Berkeley's *Peziza*."

Gregarious, sessile, cups hemispherical, furfuraceo-floccose, almost pruinose; hymenium concave, tawny; asci clavate; sporidia oblong, subfusiform or cymbiform.—*Ann. N.H. no. 770.*

On dead stems of *Umbelliferae*.

Very minute, often crowded, hemispherical, with the margin at first strongly inflected, clothed with furfuraceous yellow flocci. In young specimens the orifice is distinctly marked, with radiating lines. Sporidia ($\cdot 0003\text{--}\cdot 0004$ in.) $\cdot 0076\text{--}\cdot 01$ m.m. long. Under the lens the coat consists of very short flocci, intermixed with minute hyaline amorphous scales.—*B. & Br.*

2058. *Peziza aspidiicola*. B. & Br. "Fern *Peziza*."

White, rather buff when dry; stem very short; cups concave, subhemispherical, externally furfuraceo-floccose; asci very short and slender; sporidia oblong, subclavate.—*Ann. N.H. no. 771*.

On dead stems of *Aspidium filix-mas*. Nov.

Very minute, gregarious; stem extremely short, gradually passing into the sub-hemispherical cup, which is clothed externally with minute pellucid scales, mixed with a few obscure hyaline flocci. Sporidia ($\cdot 0002$ in.) $\cdot 005$ m.m. long.—*B. & Br.*

2059. *Peziza albo-testacea*. Desm. "Brick-red *Peziza*."

Eruptent, sessile, small, scattered, flocculose, white, and brick-red colour, hemispherical, closed when dry; disc open when moist, flesh-coloured; asci small.—*Desm. Ann. Sc. Nat. xix. (1843), p. 368. Desm. exs. no. 1415. Ann. N.H. no. 560*.

On dead stems of grass. July.

The exterior is of a brick-red colour, the hairs with which it is covered being white at their tips.

2060. *Peziza apala*. B. & Br. "Pale rush *Peziza*."

Minute, scattered or crowded, cups with the stem obconical, externally furfuraceo-villous, fawn-coloured; hymenium plane, darker; asci clavate; sporidia elongated, filiform, flexuous, almost as long as the asci.—*Ann. N.H. no. 561. Cooke exs. no. 287. Rabh. F.E. no. 25*.

On dead rushes. Feb.

Externally resembling *P. diminuta*. Rob. (*Desm. exs. no. 1538*), but more shaggy, of a less vinous tint, and with a plane, not concave hymenium. The sporidia are filiform, and not merely oblong; the hairs, too, are obtuse.—*B. & Br.*

2061. *Peziza clavariarum*. Desm. "Clavaria *Peziza*."

Sessile, black, very minute, scattered, globose, externally bristling with long setæ; asci clavate; sporidia ovoid.—*Desm. Ann. Sc. Nat. ser. ii. vol. 8, t. 2, f. 1. B. & Br. Ann. N.H. no. 563. Peziza nigra, Sow. t. 307*.

On decayed *Clavaria*. Autumn.

The cups are globose and black, so as, at a hasty glance, liable to be mistaken for a hispid *Sphæria*.

2062. *Peziza straminum*. B. & Br. "Grass *Peziza*."

Cups hemispherical, sessile, concave; margin incurved, ex-

ternally pale farinaceous, internally pinkish yellow.—*B. & Br. Ann. N.H. no. 571.*

On dead sheaths of wheat and grasses.

Minute, not exceeding $\frac{1}{2}$ line diameter; cups hemispherical, concave, sessile, or at length expanded; margin incurved, externally densely farinaceous, pale, internally of a pinkish yellow, or flesh colour.—*B. & Br.*

2063. *Peziza vectis.* B. & Br. "Centaury Peziza."

Minute, subglobose, somewhat depressed, dark-brown, rough with short brown hairs; disc concave, pale; sporidia between filiform and fusiform.—*Ann. Nat. Hist. no. 957.*

On dead stems of *Centaurea nigra*.

Sporidia ($\cdot 0012$ in.) $\cdot 003$ m.m. long.

2064. *Peziza ilicincola.* B. & Br. "Holly Peziza."

Fasciculate; cups furfuraceous, externally dirty white, within cinereous, tinged with rose; asci clavate; sporidia at first uniseriate, globose, with a large globose nucleus.—*Ann. N.H. no. 958, t. xvi. fig. 17.*

On holly. Nov.

Sporidia ($\cdot 00025$ in.) $\cdot 0065$ m.m. diameter.

Sec. 3. Tapesia—crowded, or seated on a tomentose subiculum.

2065. *Peziza atrelia.* Pers. "Woolly-yellow Peziza."

Sessile, scattered, sub-ventricose, golden-yellow; subiculum thin, whitish.—*Fr. S.M. ii. p. 107. Pers. M.E. p. 273. Eng. Fl. v. p. 199. Rav. exs. v. no. 41. Moug. exs. no. 783. Lib. exs. no. 127. Fckl. exs. no. 1191. P. Wauchii, Grev. t. 139. Arachnopeziza aurelia, Fckl. Sym. Myc. p. 303.*

On dead leaves, &c. Rare. [Low. Carolina.]

Cup 1-2 lines broad, woolly; subiculum radiating; sporidia oblong, at length 1-3 septate, $\cdot 014 \cdot 021 \times \cdot 003 \cdot 004$ m.m.—*Nyl.*

PEZIZA ANOMALA, Eng. Fl. v. p. 199. See *Solenia ochracea*.

2066. *Peziza domestica.* Sow. "Plaster Peziza."

Sessile, gregarious, obovate, strigose, salmon-coloured; subiculum thin, whitish.—*Fr. S.M. ii. p. 107. Sow. t. 351. Eng. Fl. v. p. 199.*

On whitewashed walls.

It first clothes the places that have been wetted with a fine cottony or membranaceous film, nearly as white as the plaister, which is in a short time partly covered with salmon-coloured knobs. These at length form a kind of upright *Peziza*, externally villous.—*Sowerby*.

2067. *Peziza Piggottii*. B. & Br. "Piggott's Plaster *Peziza*."

Mycelium white, downy; cups nearly hemispherical, or cyathiform, slightly concave; hymenium pale brick-red; asci cylindrical; paraphyses linear; sporidia elliptic, with a single, very distinct nucleus, in the centre of which is a bright point.—*Ann. N.H. no. 769*.

On plaster ceilings.

Mycelium white, downy, but not spreading very widely, running up the base of the hemispherical or cyathiform cups, which are about 2 lines broad; margin generally acute; sporidia ($\cdot 0005$ in.) $\cdot 012$ m.m. long, by ($\cdot 0003$ in.) $\cdot 0076$ m.m. wide.—*B. & Br.*

2068. *Peziza cæsia*. Pers. "Blue-eyed *Peziza*."

Sessile, becoming plane, villous, whitish, base ending in a subiculum of long interwoven hairs; disc subgelatinous, bluish-grey.—*Fr. S.M. ii. p. 108. Pers. Syn. p. 657. Ic. & Des. t. 7, f. 1. Nees. f. 272. Sturm. iii. t. 31. Tapesia cæsia, Fckl. Sym. Myc. p. 301.*

On chips. Appin.

[Low. Carolina.]

Also found in England by Mr. Baxter.—*M. J. B.*

Sporidia cylindrical, curved, hyaline.—*Fckl.*

2069. *Peziza Chavetiae*. Lib. "Dark-eyed *Peziza*."

Gregarious, sessile; cups minute, membranaceous, hemispherical, concave, tomentose, white, with long hairs at the base, interwoven with the web-like subiculum, of the same colour; disc sub-tremellose, blackish-brown; sporidia globose.—*Libert. exs. no. 26. Tapesia Chavetiae, Fckl. Sym. Myc. p. 301.*

On chips.

This resembles *P. cæsia*, but is known at once by the yellowish or tawny tint which it assumes in drying.—*B. & Br.*

It is doubtful whether the two may not be the same species.—*M.C.C.*

2070. *Peziza eriobasis*. Berk. "Cottony *Peziza*."

Gregarious, but generally distinct; cups orbicular, tomentose, fixed to little, round, snow-white, cottony spots, which are sometimes confluent; when fresh white, when dry the disc has a yellowish tinge; asci slightly clavate, or obtusely lanceolate; sporidia oblong.—*Ann. N.H. no. 312.*

On smooth inner surface of bark.

Differs from *P. cæsia* and *P. chavetiae* in its larger cups, pale disc, and several other points. The cups are sometimes extremely thin, crowded, and pressed very close to the matrix, but this is not usually the case.—*B. & Br.*

2071. *Peziza Bloxami.* *B. & Br.* "Bloxam's *Peziza*."

Densely crowded, seated on a white mycelium; cups concave, pale fawn colour, externally farinaceous; disc of the same colour.—*Ann. N.H. no. 566.*

On fallen branches. Twycross. [*S. Carolina.*]

Very densely crowded so as nearly to conceal the white cottony mycelium, in which the cups are half immersed. At first globose, white, and densely pruinose, acquiring as they expand a pale fawn colour, and gradually becoming nearly smooth. In dry specimens bundles of the cups are collected in little patches, so as to expose the white mycelium between them.—*B. & Br.*

2072. *Peziza mutabilis.* *B. & Br.* "Changeable *Peziza*."

Minute, at first presenting little brown villous specks, from which the cups burst; cups scattered, brown externally, hemispherical, villous, becoming smooth and dirty-white; sporidia minute, elongated, somewhat curved, containing two nuclei, endochrome sometimes restricted to either extremity.—*Ann. N.H. no. 564.*

On leaves of *Aira cæspitosa.* Feb.

When old it bears some resemblance to pale forms of *P. atrata* or *P. palustris*.—*M. J. B.*

2073. *Peziza rosæ.* *Pers.* "Rose-stem *Peziza*."

Sessile, sub-coriaceous, concave, sub-tomentose, bright-brown, as well as the tomentose subiculum.—*Pers. M.E. p. 278. Fr. S.M. ii. p. 109. Eng. Fl. v. p. 200. Tode. i. f. 41. Mag. Zool. & Bot. no. 10. Berk. exs. no. 157, 286, variety. Fckl. exs. no. 1874. Rabh. F.E. no. 354. Tapesia Rosæ, Fckl. Sym. Myc. 301.*

On dry branches of *Rosa canina.* Oct.

[*Low. & Mid. Carolina.*]

Forming small roundish patches on the branches, sometimes surrounding them.—*Eng. Fl.*

The variety published by the Rev. M. J. Berkeley (no. 286), occurred near Liverpool, on sycamore (*Ann. N.H. no. 313*).

Sporidia elongated, '007-'01 × '002-'0025 m.m.—*Karst.*

2074. *Peziza fusca.* *Pers.* "Crowded Brown *Peziza*."

Sessile; cups concave, brown (smooth towards the margin), at length plane, cinereous, fixed beneath to a broad, tomentose,

dark-brown subiculum.—*Pers. M.E. p. 273. Fr. S.M. ii. p. 109. Grev. t. 192. Fckl. exs. no. 1593. Tapesia fusca, Fckl. Sym. Myc. p. 302. Pez. vulgaris, Fckl. exs. no. 1173.*

On fallen branches. Spring. [Mid. Carolina.]

Spreading in patches two inches or more wide.

Sporidia oblong-fusiform or fusiform, simple, $0.008-0.016 \times 0.002-0.0025$ m.m.—*Nyl. Karst.*

2075. *Peziza Johnstoni.* Berk. "Johnston's *Peziza*."

Sessile; cups globose, or sub-turbinate, at length open and rufous, with a satiny lustre, attached beneath to a broad black-brown, grumous subiculum.—*Ann. N.H. no. 313.*

On fallen branches. Berwick.

Forming a uniform stratum on decayed sticks; cups half a line broad, at first brown and pulverulent, at length rufous, rather thin, with a satiny lustre, subturbinate, with the margin permanently inflected, at first quite closed; subiculum granulated, grumous, obscurely floccose.—*M. J. B.*

2076. *Peziza sanguinea.* Pers. "Blood-red *Peziza*."

Cups concave, smooth, becoming blackish; base surrounded by a short blood-red tomentum.—*Fr. S.M. ii. p. 110. Pers. M.E. p. 273. Nees. f. 271. Mag. Zool. & Bot. no. 11. Fckl. exs. no. 1187. Tapesia sanguinea, Fckl. Sym. Myc. p. 303.*

On fir. Nov. Beeston, Notts. [Low. & Mid. Carolina.]

Sporidia ovoid-oblong or fusiform, simple, $0.006-0.01 \times 0.0025-0.003$ m.m.—*Nyl. Karst.*

Sect. 4. Fibrina—externally fibroso-striate, with adpressed hairs.

2077. *Peziza rudis.* Berk. "Rustic *Peziza*."

Fasciculate, turbinato-stipitate; hymenium plane, here and there depressed, rugose, yellow-brown, somewhat vinous, externally finely fibrillose-striate; stem elongated, lacunose or striate.—*Berk. in Proc. N.H. Soc. Berw. p. 190. Ann. N.H. no. 574. t. 6, f. 13.*

On shallow gravel and peat. June.

2078. *Peziza bolaris.* Batsch. "Red-ochre *Peziza*."

Infundibuliform; cup hemispherical, fibrillose-veined, sub-ochraceous; disc brown; stem short, blackish.—*Fr. S.M. ii. p. 112. Batsch. f. 155. Eng. Fl. v. p. 200. Ciboria bolaris, Fckl. Sym. Myc. p. 311.*

On willow. Autumn. Appin. [Mid. Carolina.]

Stem very variable in length in the same group, 1.2 lines or more high; cup 1.2 lines broad, when young villous, soon, however, losing its villosity.—*Eng. Fl.*

Sporidia oblong-ovate, hyaline, distinctly scrobiculate.—*Fuehl.*

2079. *Peziza siparia.* B. & Br. "Curtain *Peziza*."

Cups sub-sessile, externally furfuraceous, ochraceous; hymenium becoming brownish; sporidia linear-oblong, curved.—*Ann. N.H. no. 772.*

On decorticated elm branches. Oct.

Accompanied by a floccose stratum, which is, however, possibly not constant. Cup at first sub-globose, then cyathiform, scarcely stipitate, but fixed by a broad base, with the margin free, externally ochraceous, furfuraceous; hymenium ochraceous, at length brownish; sporidia (.00045 in.) .012 m.m. long. often with a nucleus at either extremity. At first with some resemblance to *P. firma*.—*B. & Br.*

2080. *Peziza ledi.* A. & S. "Arbutus *Peziza*."

Sessile, globose or hemispherical, externally rugose, brownish-black, mouth especially shining, greenish, covered with a compact powder; disc dingy.—*Fr. S.M. ii. p. 114. A. & S. t. 10, f. 7. Nees. f. 264. Ann. N.H. no. 160.*

On *Arbutus Uva-Ursi*. Sept. Glencoe.

2081. *Peziza leptospora.* B. & Br. "Thread-spored *Peziza*."

Cups at first hemispherical, then expanded, externally lurid from the scattered, black, adpressed flocci, internally whitish; sporidia filiform.—*B. & Br. Ann. N.H. (1866), no. 1166, t. 4, f. 30.*

On decayed wood. Jedburgh.

About half a line across; at first perfectly globose, often collapsed in the centre, but gradually opening and exposing the soft, pallid, sometimes straw-coloured hymenium; asci oblong; sporidia very long and slender, filiform, flexuous, with a row of globular nuclei, at length repeatedly septate.—*B. & Br.*

Series 3. *Phialea*, Fr.

Veil none; cups waxy or membranaceous, quite smooth (or very rarely mealy or sub-tomentose), soon open; subiculum none.—*Berk. Outl. p. 370.*

Stipitate, membranaceous	.	.	.	<i>Hymenoscypha.</i>
Sessile, waxy, soft	.	.	.	<i>Mollisia.</i> 700
Indurated, persistent	.	.	.	<i>Durella.</i> 706

Sect. 1. *Hymenoscypha*. Stipitate, submembranaceous.

2082. *Peziza firma*. Pers. "Ochre-brown *Peziza*."

Cup infundibuliform, then dilated, repand, pale brown; stem long, attenuated downwards, becoming blackish; sporidia sub-elliptic, pointed at either end.—*Fr. S.M.* ii. p. 117. *Pers. M.E.* p. 277. *Eng. Fl.* v. p. 200. *Gonn. & Rabh.* iii. t. 6, f. 3. *Lib. exs.* no. 228. *P. ochroleuca*. *Bolt.* t. 105, f. 1. *Sow.* t. 115. *Ciboria firma*. *Fckl. Sym. Myc.* p. 312.

On sticks. Autumn. Common. [Mid. Carolina.]

Gregarious, leathery when fresh, hard when dry; cup $\frac{1}{4}$ - $\frac{1}{2}$ in. broad; stem $\frac{1}{2}$ -2 in. high. Varying in colour from whitish ochre to brown; sometimes on decaying acorns, covered with the soil.

Sporidia ('0007 in.) '0177 m. m. long.

Sporidia ellipsoid, simple (sometimes spuriously septate) '015-'021 \times '005-'009 m.m.—*Nyl. Karst.*

Sporidia '004-'005 m.m. broad, and 4-5 times as long.—*G. & R.*

2083. *Peziza Curreiana*. Tul. "Sclerotium *Peziza*."

Cups brown, very smooth, elastic, at first subhemispherical, then infundibuliform; margin entire; stem slender, flexuous, equal, smooth; asci cylindrical, obtuse; sporidia inconspicuous, narrow, subcylindrical, sometimes slightly curved, and colourless.—*Tul. Carp.* i. p. 105. *Curr. Linn. Trans.* xxiv. p. 495, t. 51, f. 17, 18. *Linn. Journ.* i. p. 147. *Peziza Curreii*. *Berk. Outl.* p. 370.

On dead *Juncus*, developed from *Sclerotium roseum*.—*Ann. N.H.* no. 163.

Sporidia ('0004-'0005 in.) '01-'012 m.m. long.

The *Sclerotium* is found in the pith of rushes, from which Mr. Currey found the *Peziza* freely developed. (See *Journ. Linn. Soc.*, vol. 1, p. 147.)

"The cup was of a bright brown colour, varying somewhat in shape; in most it was hemispherical, in some infundibuliform; in one the edge of the cup was erect, extending beyond the equator of the hemisphere, in others the edge of the cup was recurved and sinuous. The number growing from one *Sclerotium* varied from 2 to 13, and the greater the number the less was the size of the individual. The diameter of the largest cup was rather more than one half, and of the smallest about 1-16th of an inch. The stalk was well developed, being generally about the length of the diameter of the cup of a darker colour, and tapering somewhat from above downwards. In one specimen the base of the stem at its point of junction with the *Sclerotium* was thickly covered with hairs."—*F. Currey*.

2084. *Peziza ciborioides*. Fr. "Oak-leaf *Peziza*."

Cup infundibuliform, even, dark rufescent; stem very long, thread-like, bright brown.—*Fr. S.M.* ii. p. 117. *Ann. N.H.* no. 158. *Mont. Ann. des Sc. Nat.*

On oak leaves.

[Low. Carolina.]

Sporidia ellipsoid, simple, $\cdot 009\text{--}\cdot 012 \times \cdot 004\text{--}\cdot 006$ m.m.—*Nyl.*

2035. *Peziza echinophila.* Bull. "Chestnut *Peziza*."

Cup infundibuliform, then plane, pale cinnamon; stem long, paler, at first subtomentose.—*Fr. S.M.* ii. p. 118. *Bull. t.* 500, f. 1. *Ann. N.H.* no. 567.

On fallen involucre of Chestnut.

2086. *Peziza coronata.* Bull. "Crowned *Peziza*."

Stipitate, pallid, cup concave, margin crowned, with setaceous teeth.—*Fr. S.M.* ii. p. 120. *Bull. t.* 416, f. 4. *Nees. f.* 293. *Fl. Dan. t.* 1380, f. 1, t. 1016, f. 1. *Fckl. exs. no.* 1183.

On stalks of plants.

[Mid. Carolina.]

Sporidia fusiform, $\cdot 014\text{--}\cdot 02 \times \cdot 0035\text{--}\cdot 004$ m.m.—*Nyl. Karst.*

Sporidia oblong-fusiform, curved, hyaline.—*Fckl.*

2087. *Peziza inflexa.* Bolt. "Triangular toothed *Peziza*."

Stipitate, whitish, cup subhemispherical, margin surrounded by triangular teeth.—*Fr. S.M.* ii. p. 120. *Bolt. t.* 106, f. 2. *Sow. t.* 306. *Eng. Fl. v.* p. 201.

On stems of nettles, &c. Autumn.

2088. *Peziza Persoonii.* Moog. "Mare's-tail *Peziza*."

Cup urceolate, orange; margin prominent, membranaceous, whitish; stem cylindrical, rosy.—*Fr. S.M.* ii. p. 121. *Eng. Fl. v.* p. 201. *Pers. M.E. t.* 12, f. 1-4. *Grev. t.* 162. *Eng. Fl. v.* p. 201. *Lycoperdon equiseti. Hoffm. Cr. t.* 5, f. 1. *Fckl. exs. no.* 1184. *Gonn. & Rabh. iii. t.* 5, f. 5. *Lib. exs. no.* 329. *Rabh. F.E. no.* 123. *Stamnaria Persoonii. Fckl. Sym. Myc. p.* 309.

On *Equisetum*, in bogs and moist places. Rare.

Sporidia cylindrical, pseudo-septate, $\cdot 005$ m.m. broad, and about 3 times as long.—*G. & R.*

2089. *Peziza striata.* Fr. "Striate *Peziza*."

Cup turbinate, striate, brownish; margin connivent, subpruinose; disc urceolate, pallid, as well as the short stem.—*Fr. S.M.* ii. p. 122. *Ann. N.H.* no. 568. *P. urticae. Pers. M.E. i. p.* 286. *Nyl. Pez. p.* 39. *Fckl. exs. no.* 1180.

On dead stems of herbaceous plants.

Sporidia oblong-fusiform, simple, $\cdot 007\text{--}\cdot 008 \times \cdot 002$ m.m.—*Nyl.*

2090. *Peziza cacaliæ*. *Fr.* "Stock *Peziza*."

Turbinate, even, brownish, mouth subconnivent, paler; stem rather long, slightly thickened.—*Fr. S.M.* ii. p. 122. *Ann. N.H.* no. 569. *Fckl. exs.* no. 2283.

On seed vessels of common stock. Guernsey.

Sporidia narrowly cylindrical, somewhat curved.—*Fckl.*

2091. *Peziza nitidula*. *B. & Br.* "Glistening *Peziza*."

Rather firm, minute, pale watery tan; stem short, equal; cup subhemispherical, irregular, farinaceous, glistening; asci filiform; spores minute, cymbiform; endochrome sometimes retracted to either extremity.—*Ann. N.H.* no. 570.

On dead leaves of *Aira cæspitosa*. Jan.

Scattered; cup slightly concave, at first subhemispherical, then nearly plane, often irregular, covered with glistening mealy particles. Allied to the preceding, but distinguished by its uniformly mealy surface, irregular shape, and depressed, not clavate, cup.—*B & Br.*

2092. *Peziza cyathoidea*. *Bull.* "Goblet *Peziza*."

Thin, whitish, pallid; cup globose, or cyathiform, then expanded, quite entire; stem filiform, rather long.—*Fr. S.M.* ii. p. 124. *Eng. Fl.* v. p. 202. *Bull. t.* 316, f. 2. *Batsch. f.* 149? 151. *Nees. f.* 294. *Holms. ii. t.* 11. *Berk. exs.* no. 158. *Fckl. exs.* no. 1179. *P. pedicellata*. *Sow. t.* 369, f. 4.

On dead herbaceous stems. Aug.—April. Common.

[Mid. & Up. Carolina.]

Sporidia fusiform, simple, $\cdot 005\text{--}\cdot 009 \times \cdot 001\text{--}\cdot 002$ m.m.—*Nyl.*

Sporidia fusoid or filiform, $\cdot 005\text{--}\cdot 01 \times \cdot 001\text{--}\cdot 002$ m.m.—*Karst.*

2093. *Peziza caucæ*. *Reb.* "Catkin *Peziza*."

Pallid brownish; cup vasculiform; margin erect; stem short, rather thickened, sub-flexuose.—*Fr. S.M.* ii. p. 126. *Reb. t.* 4, f. 17. *Fl. Dan. t.* 2084, f. 2. *Pers. M.E.* iii. t. 30, f. 2. *Kromb. t.* 5, f. 37-39. *Rabh. exs.* no. 1019. *P. sclerotiorum*, *Lib. Ciboria caucæ*, *Fckl. Sym. Myc.* p. 311.

On fallen catkins.

2094. *Peziza imberbis*. *Bull.* "Beardless *Peziza*."

Fleshy or waxy, smooth, white; cups plano-concave, sub-flexuose; stem papillæform; sporidia linear, slightly curved.—*Fr. S.M.* ii. p. 136. *Batsch. f.* 56. *Bull. t.* 467, f. 2. *B. & Br. Ann.*

N.H. (1866), no. 1167. *Helotium imberbe*, Berk. *Outl.* p. xvii.
Ann. N.H. no. 963. *Fckl. exs.* no. 1148.

On willow. Mossburnford.

Sporidia ($\cdot 0004$ in.) $\cdot 01$ m.m. long.

2095. *Peziza minutissima.* Batsch. "Very minute *Peziza*."

Whitish; cups obovate, substipitate; margin incurved; hymenium concave; asci clavate, elongated; sporidia fusiform, 4-septate, joints rather swollen, paraphyses filiform.—*B. & Br. Ann. N.H.* 1865, no. 1071, t. 15, f. 21. *Batsch. f.* 143. *P. Helminthosporii*, Blox. *MSS.*

On *Helminthosporia*. Jan. Twycross. Batheaston.

Pallid; cups clavate, substipitate; margin incurved; sporidia ($\cdot 0014$ in.) $\cdot 035$ m.m. long, quadrisepate. Interesting from the marked character afforded by the sporidia.—*M.J.B.*

Sect. 2. Mollisia—sessile, waxy, soft.

2096. *Peziza clavus.* A. & S. "Swamp *Peziza*."

Fleshy or gelatinous, somewhat firm, nearly ob-conic, purplish; disc convexo-plane; pileiform; stem thick; sporidia regularly oblong, elliptic, with a sporidiolum at either extremity.—*Fr. S.M.* ii. p. 137. *A. & S. p.* 306, t. 11, f. 5. *Ann. N.H.* no. 575.

On leaves, &c., in swamps. March—April.

2097. *Peziza vinosa.* A. & S. "Vinous *Peziza*."

Minute, sessile, sub-tremellose, nearly plane, smooth, quite entire, fleshy-red.—*Fr. S.M.* ii. p. 141. *A. & S. p.* 308. *Eng. Fl.* v. p. 205. *Rav. exs.* iv. no. 19. *Calloria vinosa*, *Fckl. Sym. Myc.* p. 283.

On fallen branches. Autumn—Spring.

[Low. & Mid. Carolina.]

When dry it is much more concave, and appears to be held down by gelatinous filaments, which vanish as the plant swells on the application of moisture, and assumes a much paler tint.—*Eng. Fl.*

Sporidia acicular-fusiform, simple, $\cdot 011\text{--}\cdot 016 \times \cdot 001\text{--}\cdot 0015$ m.m.—*Nyl. Karst.*

2098. *Peziza auricolor.* Blox. "Golden *Peziza*."

Soft, subgelatinous, orange; cup marginate, springing from a stratum of delicate, hyaline filaments; sporidia narrow.—*B. & Br. Ann. N.H.* 1865, no. 1068.

On the under side of a fallen tree. Gopsal.

Cups with a broad raised margin, springing from delicate, radiating, hyaline, interwoven hairs. The evident affinity of this species to *P. vinosa*, induces us to place it in *Mollisia* rather than *Tapesia*.—*M.J.B.*

2099. *Peziza atrovirens.* Pers. "Dark-green *Peziza*."

Sessile, sub-tremellose, when young globose, green, when adult hemispherical; disc plane, with a flesh-coloured tinge.—*Fr. S.M.* ii. p. 141. *Pers. Syn.* p. 635. *Eng. Fl.* v. p. 205. *Grev. Fl. ed.* p. 425. *Coryne virescens*, *Tul. Carp.* iii. p. 193, t. xviii. f. 12-15.

On decaying wood.

[Mid. Carolina.]

2100. *Peziza cinerea.* Batsch. "Cinereous *Peziza*."

Sessile, soft, minute, scutellate, cinereous; margin quite entire, whitish.—*Fr. S.M.* ii. p. 142. *Batsch. f.* 137, 219. *Sow. t.* 64. *Nees. f.* 269. *Bull. t.* 416, f. 1. *Fl. Dan. t.* 1490, f. 2. *Cooke exs. no.* 390. *Eng. Fl.* v. p. 205. *Niptera cinerea*, *Fckl. Sym. Myc.* p. 292.

On decaying wood, &c. Autumn—Spring. Common.

[Mid. Carolina.]

Crowded, 1-2 lines broad, either equal or lobed, and waved at the margin. Hymenium pale or grey, watery, paler towards the circumference, substance soft and sometimes almost gelatinous.—*Grev.*

Sporidia oblong, rarely slightly curved, simple, $\cdot 006\text{--}\cdot 011 \times \cdot 0015\text{--}\cdot 0025$ m.m.—*Nyl.*

Sporidia straight or curved, $\cdot 006\text{--}\cdot 012 \times \cdot 001\text{--}\cdot 0025$ m.m.—*Karst.*

2101. *Peziza lacustris.* Fr. "Swamp *Peziza*."

Sessile, becoming plane, orbicular, soft, waxy, plano-convex, dingy blackish; sporidia colourless, crowded at the apex of the ascus, pellucid, elliptical, rounded at both ends, often slightly curved, sometimes with an indistinct minute nucleus at each extremity.—*Fr. S.M.* ii. p. 143. *Fr. exs. no.* 173. *Curr. Linn. Trans. Rabh. F.E.* no. 231. *Niptera lacustris*, *Fckl. Sym. Myc.* p. 292.

On submerged stems of *Alisma plantago*. Near Blackheath.

Sporidia ($\cdot 0005\text{--}\cdot 0006$ in.) $\cdot 012\text{--}\cdot 015$ m.m. in length; paraphyses filiform or subclavate.—*F.C.*

Fries "*Summa Veg. Scan.*" makes this the type of a new genus, *Niptera*, which he places near *Ascobolus*.

When young adnate, plano-convex, $\frac{1}{2}$ line broad, even, smooth, black, then dilated, plane, free beneath, except the central point of adhesion, externally sooty-black, quite black when dry; margin at first connivent, then open, inflexed, entire; disc turgid, soft, when moist dingy, when dry black.—*Fries.*

Sporidia oblong, 1-3 septate, $\cdot 022\text{--}\cdot 03 \times \cdot 006\text{--}\cdot 009$ m.m.—*Nyl.*

2102. *Peziza Browniana.* *Blox.* "Brown's *Peziza*."

Cup hemispherical, sessile, horny; margin paler, ciliate; disc pallid; sporidia shortly fusiform, hyaline.—*B. & Br. Ann. N.H.* (1865), no. 1072.

On dead stems of *Epilobium hirsutum*. *Twycross.*

Allied to *P. lacustris*. The sporidia are (.00045 in.) .011 m.m. long, the colour is paler, and when perfect the ciliated margin, which consists of delicate, flexuous, more or less interwoven hairs, is characteristic.—*M. J. B.*

2103. *Peziza Chailletii.* *Pers.* "Chaillet's *Peziza*."

Sessile; cups urceolate, rather fleshy, ash coloured; margin toothed, blackish.—*Fr. S.M.* ii. p. 144. *Pers. M.E.* p. 288. *Fckl. exs.* no. 1868. *Pyrenopeziza Chailletii*, *Fckl. Sym. Myc.* p. 294. *Phac. patella*, *Eng. Fl.* v. p. 292 (partly).

On dead herbaceous stems.

Asci oblong-clavate; sporidia biseriate, oblong, a little curved, with two nuclei.—*Fckl.*

2104. *Peziza hepatica.* *Batsch.* "Liver-color *Peziza*."

Sessile, concave, vinous-brown, externally granulated; margin encircled with triangular teeth; paraphyses septate, inflated at the joints; sporidia elliptic, even.—*B. & Br. Ann. N.H.* 1865, no. 1069. t. 15, f. 19. *Batsch. f.* 138. *Rabh. F.E. ex.* no. 612.

On the ground beneath rabbit's dung, more rarely on the dung itself, or surrounding moss and twigs. *Jan.* *Wiltshire.*

Gregarious; when young subglobose and closed, then concave and flattened, 1-2 lines broad, of a watery consistence; paraphyses septate, the joints more or less swollen or inflated; asci linear; sporidia elliptic, uniseriate, hyaline, even (.001 × .0005 in.) .025 × .012 m.m.

2105. *Peziza sphærioides.* *Pers.* "Sphæroid *Peziza*."

Sessile, clustered, blackish, concave; margin contracted, externally rugose, whitish, pulverulent.—*Pers. M.E.* ii. p. 328. *Desm. exs.* no. 174. *Ann. N.H.* no. 577. *Roth. Ust. Ann.* i. p. 2, t. i. f. 6. *Nees. f.* 281.

On stems of *Lychnis dioica*. *Common.*

2106. *Peziza axillaris.* *Nees.* "Moss-stem *Peziza*."

Sessile, vasculiform, orange, base paler; margin obtuse.—*Fr. S.M.* ii. p. 145. *Nees. f.* 267. *Eng. Fl.* v. p. 205. *Fckl. exs.* no. 1176. *Leucoloma axillaris*, *Fckl. Sym. Myc.* p. 318.

On *Splachnum mnioides*. *Aug.* *Rare.*

Plant $\frac{1}{4}$ – $\frac{3}{4}$ line high; cup at first ovate, closed, then urceolate, of a soft waxy consistence; margin quite entire, when dry scarlet, persistent.—*Klotsch*.
Fries says that when dry it acquires a brownish tinge, and is sub-evanescent.

2107. *Peziza xanthostigma*. Fr. "Golden dot *Peziza*."

Sessile, minute, submembranaceous, smooth, concave, orbicular, golden yellow.—*Fr. S.M.* ii. p. 146. *Eng. Fl.* v. p. 206.

On rotting fir wood.

2108. *Peziza leucostigma*. Fr. "White dot *Peziza*."

Sessile, minute, submembranaceous, smooth, becoming plane, white; disc subcinereous.—*Fr. S.M.* ii. p. 146. *Eng. Fl.* v. p. 206.

On soft rotten wood.

Very minute, dirty yellow when dry; scattered, at first appearing under the form of an urceolate dot, in which state it appears under a powerful lens, most minutely rugulose, and fixed down by a few delicate white threads, then quite flat, with a narrow border, white with the slightest possible cinereous tinge in the centre; in decay dirty yellow, or even grey. Not more than half line broad.—*Eng. Fl.*

Sporidia ellipsoid, simple, $\cdot 003 \times \cdot 0015$ m.m.—*Nyl.*

Sporidia ellipsoid or oblong, $\cdot 003\text{--}\cdot 004 \times \cdot 001\text{--}\cdot 0015$ m.m.—*Karst.*

2109. *Peziza ulmariae*. Lasch. "Meadow-sweet *Peziza*."

Scattered, very minute, cups subglobose, at length open, umber, with short downy hairs; disc honey-coloured; asci small, cylindrical; sporidia cylindrical, minute.—*Klotch. exs. no.* 1723.
Cooke exs. no. 399. *Peziza spirææ*. *Kirch. Lotos.* (1856), p. 246?

On stems of *Spiræa ulmaria*.

Forming very minute points on the dead stems, scarcely visible to the naked eye, usually subglobose and nearly closed. It seems to be much more minute than *Kirchner's P. spirææ*, quoted above.

2110. *Peziza vulgaris*. Fr. "Common *Peziza*."

Sessile, subcæspitose, membranaceous, soft, smooth, dirty-white, becoming pallid.—*Fr. S.M.* ii. p. 146. *Eng. Fl.* v. p. 206.
Rav. exs. iv. no. 18.

var. β. diaphana. Scattered, urceolate, then plane, whitish, hyaline.—*Sow. t.* 389, f. 7.

On fallen branches.

[United States.]

Sporidia cylindrical-oblong, $\cdot 005\text{--}\cdot 007 \times \cdot 0015$ m.m.—*Nyl.*

Sporidia straight or curved, $\cdot 005\text{--}\cdot 008 \times \cdot 0015$ m.m.—*Karst.*

2111. *Peziza erumpens.* Grev. "Petiole *Peziza*."

Minute, of a waxy-watery consistence, smooth, sessile, grey, erumpent.—*Grev. t.* 99. *Eng. Fl.* v. p. 206. *Gonn. & Rabh.* iii. t. 5, f. 6. *Desm. exs.* ii. no. 1345.

On sycamore petioles. Autumn.

Resembling to the naked eye an *Hysterium* when dry, in moist weather distending the small slit in the back of the petiole, till it attains its round form, when the margin projects over the edge of the fissure.—*Grev.*

Sporidia '003 '005 m.m. broad, and 2-3 times as long.—*G. & R.*

2112. *Peziza atrata.* Pers. "Small Black *Peziza*."

Sessile, subglobose, smooth, blackish, mouth connivent, whitish.—*Fr. S.M.* ii. p. 148. *Eng. Fl.* v. p. 207. *Nees. f.* 266. *Fckl. exs.* no. 1869. *Cooke exs.* no. 284. *Rav. exs.* vi. no. 82. *Berk. exs.* no. 68. *Pyrenopeziza atrata.* p. 294.

On dead herbaceous stems, &c.

[United States.]

Scattered or gregarious, 1 line or more broad, blackish, with a livid, sub-olivaceous tinge, the border nearly white, globose at first, but when crowded often irregular, rugulose under a lens.—*Eng. Fl.*

Sporidia narrow-oblong, simple, '007 × '0015 m.m.—*Nyl.*

Sporidia acicular, '005-'008 × '0015 m.m.—*Karst.*

2113. *Peziza cornea.* B. & Br. "Horn-coloured *Peziza*."

Minute, gregarious, sessile, at first globose, yellow horn coloured, at length shortly obconic or turbinate, orange-brown; sporidia fusiform, slightly curved.—*Ann. N.H.* no 578.

On dead stalks of *Carex paniculata*. March.

Sometimes slightly hollow, but more generally flat and granulated, margin rather jagged. An extremely pretty, though minute species.—*B. & Br.*

2114. *Peziza fusarioides.* Berk. "Nettle *Peziza*."

Hemispherico-depressed, soft, orange-red, stroma not distinct; stylospores very long, pellucid, curved.—*Fusarium tremelloides.* *Grev. t.* 20. *Eng. Fl.* v. p. 355. *Bast. exs.* no. 50. *Moug. exs.* no. 396. *Cooke exs.* no. 343. *Berk. exs.* no. 103.

ASCOPHORE. Cups shallow, scattered, or gregarious, erumpent, at first subglobose, gradually expanded, rather thick, even, or flexuous border, orbicular or elongated, sometimes confluent, bright orange; asci clavate; paraphyses slender, linear.—*Mag. Zool. & Bot.* no. 12, t. 2, f. 4. *Fckl. exs.* no. 1131. *Berk. exs.* no. 67. *Cooke exs.* no. 342. *P. neglecta.* *Lib. exs.* no. 29. *Calloria fusarioides.* *Fckl. Sym. Myc.* p. 282.

On dead nettle stems.

Cups scarcely a line in diameter; substance firm.

Sporidia oblong or fusiform oblong, $\cdot 011\text{--}\cdot 014 \times \cdot 003\text{--}\cdot 0035$ m.m.—*Nyl. Karst.*

2115. *Peziza micrometra.* B. & Br. "Point-like *Peziza*."

Very minute, sessile, subturbinate, attached by strong villous hairs, brownish, mouth somewhat contracted, finely striate; asci clavate; sporidia filiform.—*Ann. N.H. no. 773.*

On dead stems of *Juncus*. Twycross.

Extremely minute, punctiform, horn-brown; hymenium plane.—*B. & Br.*

2116. *Peziza paulula.* Rob. "Little rush *Peziza*."

Erumpent, scattered or gregarious, sessile, waxy, smooth, subglobose, very minute, externally olive-umber, internally pallid, mouth connivent, white, entire; asci short, broad, subcylindrical; sporidia oblong, obtuse, hyaline, with two nuclei.—*Ann. Sc. Nat.* (1851), xvi. p. 324, *Rob. Desm. exs. no. 2010*, ii. no. 1610. *Ann. N.H. no. 960. Kl. exs. no. 823.*

On *Juncus maritimus*. Isle of Wight.

Sporidia $\cdot 01$ m.m. ($\cdot 0003$ in.) long.

2117. *Peziza dematiicola.* B. & Br. "Black mould *Peziza*."

Gregarious, very minute; cup hemispherical, watery umber, ciliate with long hyaline flocci; disc cinereous; asci rather short; sporidia subcymbiform, hyaline.—*B. & Br. Ann. N.H. 1865, no. 1070, t. 15, f. 20.*

On dead wood, nestling amongst the flocci of some Helminthosporoid Fungus, but whether at all related or not we cannot say.

This very beautiful, though minute species, has a mixed resemblance to an *Excipula*, and such *Ascoboli* as *A. ciliatus*.—*M. J. B.*

2118. *Peziza erythrostigma.* B. & Br. "Red spot *Peziza*."

Minute, stipitate, punctiform, pale red; hymenium at length convex; asci clavate; sporidia uniseriate, elliptic, or subglobose.—*B. & Br. Ann. N.H. (1866), no. 1168, t. 4, f. 31.*

Parasitic on *Sphæria phæostroma*.

The stem is mostly curved, distinctly cellular; asci clavate; spores minute, subglobose; very minute, but a pretty object under the microscope.—*B. & Br.*

2119. *Peziza peristomialis.* B. & Br. "Holly *Peziza*."

Minute, cylindrical, pallid, mouth furnished with long white triangular teeth; disc nearly plane; asci lanceolate; sporidia biseriate, fusiform, multi-nucleate.—*B. & Br. Ann. N.H.* (1866), no. 1169, t. 5, f. 32.

On holly. Penzance.

A most exquisite object under a moderate magnifier, resembling some *Actinia* in miniature. Sporidia ($\cdot 001$ in.) $\cdot 025$ m.m. long.—*B. & Br.*

2120. *Peziza viburnicola.* B. & Br. "Guelder-rose *Peziza*."

Subglobose, then hemispherical, grey, externally granulated; margin denticulate, furfuraceous; hymenium paler.—*B. & Br. Ann. N.H.* (1866), no. 1170.

On either side of dead leaves of *Viburnum*. Shere, Surrey.

Minute, punctiform, externally speckled with little dark tufts of cells, which sometimes give out a few short, flexuous hairs; asci clavate; sporidia lanceolate ($\cdot 0004$ – $\cdot 0005$ in.) $\cdot 01$ – $\cdot 012$ m.m. long.

2121. *Peziza nervisequia.* Desm. "Plantain-leaf *Peziza*."

Seriate, black; cups nestling in an indurated, linear subiculum.—*Fr. S.M.* ii. p. 153. *Pers. M.E.* p. 308. *Desm. exs.* no. 2012. *B. & Br. Ann. N. H.* (1865), no. 1171.

On leaves of *Plantago lanceolata*. Feb. Near Batheaston.

Sporidia ($\cdot 0004$ in.) $\cdot 01$ m.m. long.

Sect. 3. Durella—indurated, persistent, lichenoid.

2122. *Peziza resinæ.* Fr. "Resin *Peziza*."

Sessile, hard, urceolate, then patellate, orange; margin evanescent.—*Fr. S.M.* ii. p. 149. *B. & Br. Ann. N.H.* (1866), no. 1173. *Fckl. exs.* no. 1166. *Pezizicula resinæ*, *Fckl. Sym. Myc.* p. 279.

On resin. Jedburgh.

2123. *Peziza melanotheja.* Fr. "Little Black *Peziza*."

Sessile, minute, externally between farinaceous and villous, reddish yellow; disc becoming concave, black.—*P. melanoxantha*, *Fr. S.M.* ii. p. 97.

On oak branches.

[Mid. Carolina.]

Small, but beautiful, gregarious, granuliform; disc at length plane, opaque; the margin prominent and entire.

2124. *Peziza compressa*. A. & S. "Compressed *Peziza*."

Sessile, innate, thin, blackish; disc black, when dry compressed, conchiform.—*Fr. S.M.* ii. p. 152. *A. & S.* p. 340. *Eng. Fl.* v. p. 207. *Durella commutata*, *Fckl. Sym. Myc.* p. 280. *Tul. Carp.* iii. t. 22, f. 8-14.

On hard wood. Perennial. Appin. [United States.]

Minute, scattered or crowded, black, opaque, externally often brownish, subrotund, elliptic, or angular; disc homogenous, black.

Sporidia cylindrical, curved, obtuse, triseptate. This seems more closely allied to *Patellaria* than to *Peziza*. The triseptate sporidia are those of a *Patellaria*.

2125. *Peziza flexella*. Fr. "Pine-wood *Peziza*."

Immersed, compressed, minute, concave, variously flexuose, black.—*Fr. S.M.* ii. p. 152. *Eng. Fl.* v. p. 207.

On dead wood, especially pine. Perennial. Appin.
[Low. Carolina.]

Smaller than *P. compressa*, purer black.—*M.J.B.*

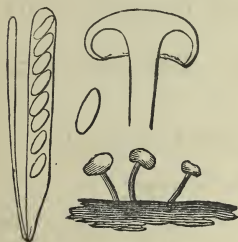
Gen. 297.**HELOTIUM, Fr.**

Fig. 332.

Disc always open, at first punctiform, then dilated, convex or concave, naked. Excipulum waxy, free, marginate, externally naked.—*Berk. Outl.* p. 371.

Disc convex	:	:	:	<i>Pelastea.</i>
Disc concave	:	:	:	<i>Calycella.</i> 711
				(Fig. 332.)

Sub-Gen. 1. PELASTEIA, Fr.

Disc convex. Receptacle hollow beneath, or flattened.—*Berk. Outl.* p. 371.

2126. *Helotium fibuliforme*. Fr. "Staff-like *Helotium*."

Firm, head convex, yellow, black-brown beneath, as well as the short, thick, subvillose stem.—*Fr. S.M.* ii. p. 155. *Eng. Fl.* v. p. 207. *Bolt. t.* 176.

On elm.

**2127. *Helotium agaricinum.* Berk. "Agaric-like
Helotium."**

Firm, dark green, convex, rather uneven; margin revolute; stem rather thick, obconic; asci long, flexuous, obtuse.—*Peziza agaricina*, *Carm. MSS. Eng. Fl.* v. p. 207.

On decayed wood. Appin.

Plant $1\frac{1}{2}$ –2 lines broad, very much resembling at first sight *Helotium virens*, but on closer inspection quite different.

**2128. *Helotium sclerotioides.* Berk. "Sclerotium-like
Helotium."**

Convex, umbilicate, clear red-brown, concave beneath, and confluent with the short, obconic stem; asci slender; sporidia? —*Peziza sclerotioides*. *B. Eng. Fl.* v. p. 208.

On decayed wood. Appin.

At first sight resembling *Sclerotium quercigenum*, about one line broad.—*M. J. B.*

129. *Helotium aciculare.* Fr. "Long-stemmed Helotium."

White, smooth, head convex; stem elongated, equal.—*Fr. S.M.* ii. p. 156. *Eng. Fl.* v. p. 208. *Bull. t.* 473, *f.* 1. *Helv. agariciformis*, *Bolt. t.* 98, *f.* 1. *Sow. t.* 57. *Pers. Obs. t.* 5, *f.* 1, *t.* 6, *f.* 1, 2. *Cooke exs. no.* 400.

On roots and old hollow stumps. Aug.—Dec. Common.
[Mid. Carolina.]

Sporidia oblong or subfusiform.

(Fig. 332.)

2130. *Helotium subtile.* Fr. "Little White Helotium."

White, minute, rather firm; head plano-convex; stem thin, short; sporidia sub-cylindrical or subfusiform, elongated.—*Fr. S.M.* ii. p. 157. *Eng. Fl.* v. p. 208. *Karst. exs. no.* 68. *Mon. Pez.* p. 141. *Fckl. exs. no.* 1160.

On fir leaves.

Stem not 1 line high, somewhat attenuated; head 1 line broad, at length slightly convex.—*Fries.*

Sporidia .005–.007 m.m. long.—*Karsten.*

Sporidia attenuated, oblong, .005–.007 × .001–.0015 m.m.—*Nyl. Karst.*

2131. *Helotium aeruginosum.* Fr. "Green Helotium."

Verdigris-green, head turbinate, then expanded, subflexuose; disc paler; stem short.—*Berk. Outl. p.* 372. *Peziza æruginosa.* *Fr. S.M.* ii. p. 130. *Eng. Fl.* v. p. 202. *Grev. t.* 241. *Berk. exs.*

no. 281. *Sow. t.* 347. *Fl. Dan. t.* 534, f. 2. *Karst. exs. no.* 151-459. *Mon. Pez. p.* 142. *Rav. exs. v. no.* 40? *Fckl. exs. no.* 1158. *Chlorosplenium æruginosum. Tul. Carp. iii. p.* 187.

On fallen oak branches. [Mid. & Up. Carolina.]

Staining the wood on which it grows, for a considerable depth, of a deep verdigris-green; the wood so stained being employed as "green oak" in the manufacture of Tunbridge ware. The fully developed *Helotium* is much more rare than the green mycelioid state.

Sporidia oblong, $\cdot 01\text{--}\cdot 014 \times \cdot 0035\text{--}\cdot 0045$ m.m.—*Nyl.*

Sporidia elongated-oblong, slightly curved, $\cdot 01\text{--}\cdot 014 \times \cdot 003\text{--}\cdot 004$ m.m.—*Karst.*

2132. *Helotium serotinum.* Fr. "Bright Yellow *Helotium*."

Bright yellow; head plano-convex, rather thin; stem short, firm, thickish.—*Berk. Outl. p.* 372. *Peziza serotina. Fr. S.M. ii. p.* 119. *Eng. Fl. v. p.* 201. *Helv. aurea. Bolt. t.* 98. *Fckl. exs. no.* 1157.

On sticks, &c., in watery places. [Mid. Carolina.]

Cup $\frac{1}{4}$ in. broad, sometimes growing almost in the water itself.

Sporidia elongated, curved, hyaline, simple.

2133. *Helotium virgultorum.* Fr. "Beech mast *Helotium*."

Tough, smooth, pallid, at length yellowish; cup patellæform; stem long, thin, flexuous; sporidia acicular-oblong or oblong, simple, or spuriously uniseptate, or granular.—*Peziza fructigena. Bull. t.* 228. *Sow. t.* 117. *Eng. Fl. v. p.* 201. *Karst. Mon. Pez. p.* 132. *Rabh. exs. ii. no.* 510. *Desm. exs. no.* 1060, ii. no. 460. *Fckl. exs. no.* 1154. *Gonn. & Rabh. iii. t.* 6, f. 4.

On acorns, beech mast, &c. Common.

Cup 1-2 lines broad, shallow from the thickness of the flesh.

Sporidia fusiform or oblong, $\cdot 014\text{--}\cdot 023 \times \cdot 0035\text{--}\cdot 0045$ m.m.—*Nyl?*

var. β . **flavescens.** *Holms. t.* 11.

On willow.

Sporidia $\cdot 0033\text{--}\cdot 0041$ m.m. long, and about six times as long.—*G. & R.*

2134. *Helotium lutescens.* Fr. "Yellowish *Helotium*."

Yellowish, small; cup hypocrateriform, orbicular; stem short, slender, subcylindrical.—*Peziza lutescens. Hedw. M. Fr. ii. t.* 9, f. 3. *Ann. N.H. no.* 826. *Fl. Dan. t.* 1440, f. 1. *Fr. S.M. ii. p.* 120.

On dead sticks amongst moss. Autumn. [Mid. Carolina.]

HELOTIUM TESTACEUM. See *Ascobolus*.

2135. Helotium conigenum. *Fr.* "Fir-cone Helotium."

Waxy or watery consistence, minute, pallid; head nearly plane, immarginate; stem thick, short, at length obliterated; sporidia subellipsoid.—*Berk. Outl.* p. 372. *Peziza conigena.* *Fr. S.M.* ii. p. 139. *Eng. Fl.* v. p. 205. *Karst. Mon. Pez.* p. 152. *Fckl. exs.* no. 1149.

On cones of Scotch fir.

Sporidia ellipsoid, simple, $\cdot 007\text{--}\cdot 008 \times \cdot 0035$ m.m. *Nyl. Karst.*

2136. Helotium phascoides. *Fr.* "Moss Helotium."

Of a waxy or watery consistence; minute, pallid, with a brick-red tinge; head turbinate, plane; stem short, subequal.—*Berk. Outl.* p. 372. *Peziza phascoides.* *Fr. S.M.* ii. p. 138. *Eng. Fl.* v. p. 204.

On mosses.

2137. Helotium acuum. *Fr.* "Fir-leaf Helotium."

Minute, stipitate, slender, whitish; head nearly plane, externally slightly hairy; sporidia fusoid-elongated or fusoid-oblong. *Berk. Outl.* p. 372. *Peziza acuum.* *Fr. S.M.* ii. p. 95. *Berk. Outl.* p. 368. *Desm. exs.* i. no. 1536, ii. no. 1036. *Karst. Mon. Pez.* p. 181. *Fckl. exs.* no. 1153.

On dead fir leaves.

Sporidia oblong or subfusiform, $\cdot 004\text{--}\cdot 005 \times \cdot 0015$ m.m.—*Nyl.*

Sporidia $\cdot 004\text{--}\cdot 006 \times \cdot 0015$ m.m.—*Karst.*

2138. Helotium luteolum. *Curr.* "Yellow mud Helotium."

Cæspitose, pale straw colour; stem about $\frac{1}{5}$ inch long; disc 1 line wide, at first hollow, ultimately expanded and convex, the edge covered with very minute, parallel white hairs, giving a somewhat ribbed or channeled appearance; sporidia straight, or slightly curved, colourless; paraphyses clavato-elongate, acuminate, septate.—*Curr. Linn. Trans.* xxiv. p. 153, t. 25, fig. 11, 12, 18.

On a gorse stick, the end of which was sunk in the mud in a pool of water. May. Paul's Cray Common.

Remarkable in its densely cæspitose and apparently branching habit, and the paraphyses are very peculiar. Its aquatic habit is also an unusual character. Sporidia ($\cdot 0004\text{--}\cdot 0005$ in) $\cdot 01\text{--}\cdot 012$ m.m. long.

2139. Helotium aquaticum. *Curr.* "Aquatic Helotium."

Solitary, stem about $\frac{1}{6}$ in. long; disc minute, very little wider than the apex of the delicate, almost filiform stem; sporidia colourless, hyaline, with granules accumulated at each end.—*Curr. Linn. Trans.* xxiv. p. 154, t. 25, f. 19.

On a fragment of stick in water. May. Paul's Cray Common. The fruit is large for the size of the plant; sporidia ($\cdot 0007$ in.) $\cdot 0177$ m.m. long.

Sub.-Gen. 2. CALYCELLA, Fries.

At first turbinate; disc concave; stem firm when present.—*Berk. Outl.* p. 372.

2140. Helotium tuba. *Fr.* "Tube Helotium."

Yellow; head turbinate; disc plane, margin swollen; stem long, slender.—*Berk. Outl.* p. 372. *Peziza tuba.* *Fr. S.M.* ii. p. 128. *Bolt.t.* 106, f. 1. *Eng. Fl.* v. p. 202. *Merulius tubæformis.* *With.* iv. p. 146.

On fallen branches.

Plant $\frac{1}{2}$ in. or more high.

2141. Helotium buccina. *Fr.* "Trumpet Helotium."

Rather large, infundibuliform, dull-yellow; stem thickened, striate, somewhat incurved.—*Berk. Outl.* p. 372. *Peziza buccina.* *Fr. S.M.* ii. p. 129. *Eng. Fl.* v. p. 202.

On wood and pine branches. Rare. Appin. [Mid. Carolina.]

2142. Helotium calyculus. *Fr.* "Yellow-brown Helotium."

Yellowish-brown; head concave, with an elevated margin; stem short, thick, clothed with whitish down.—*Berk. Outl.* p. 372. *Peziza calyculus,* *Fr. S.M.* ii. p. 129. *Eng. Fl.* v. p. 202. *Sow. t.* 116. *P. infundibulum,* *Grev. Fl. ed.* p. 423.

On fallen branches.

About 2 lines high.

2143. Helotium infundibulum. *Fr.* "Funnel Helotium."

Ferruginous-red, smooth; stem short, dilated into the head.—*Fr. Peziza calyculus, P. infundibulum,* *Fr. S.M.* ii. p. 130. *Batsch. f.* 147. *Ann. N.H. no.* 961.

On dead sticks. Dec. Twycross.

2144. Helotium Aspegrenii. *Fr.* "Yellow and white Helotium."

Head somewhat waved, smooth; disc yellow externally, as well as the sub-ascending stem, white.—*Berk. Outl. p. 372. Peziza Aspegrenii, Fr. S.M. ii. p. 131. Sow. t. 369, f. 7.*

On wood.

2145. Helotium citrinum. *Fr.* "Lemon-colored Helotium."

Crowded, lemon-yellow; head plano-concave, together with the short, thick, paler stem, forming an inverted cone; sporidia oblong-elliptic, with 2-3 nuclei.—*Berk. Outl. p. 372. Peziza citrina, Fr. S.M. ii. p. 131. Eng. Fl. v. p. 202. Fckl. exs. no. 1152. Ray. Syn. 3, t. 24, f. 4. Hedw. t. 8, f. B. Karst. exs. no. 80, 458. Karst. Mon. Pez. p. 143. Batsch. f. 218. Peziza aurea, Sow. t. 150.*

On old stumps. Common.

[United States.]

Often clustered together in large patches.

Sporidia ellipsoid, simple, $\cdot 009\text{--}\cdot 012 \times \cdot 0035\text{--}\cdot 0045$ m.m.—*Nyl.*

Sporidia with 2-3 minute nuclei, $\cdot 007\text{--}\cdot 014 \times \cdot 003\text{--}\cdot 004$ m.m.—*Karst.*

2146. Helotium pallescens. *Fr.* "Pallid Helotium."

Crowded, smooth, pale yellow or whitish, inclining to pallid; head concave; stem short, rather thickened, pallid.—*Berk. Outl. p. 372. Peziza pallescens, Fr. S.M. ii. p. 132. Eng. Fl. v. p. 203. Hoffm. Cr. t. 13. Karst. exs. no. 640. Karst. Mon. Pez. p. 145.*

On old stumps. Autumn.

[Mid. Carolina.]

White at first, then of a beautiful apricot colour, which is retained by the dried plant; rather crisp, $\frac{1}{2}$ line broad; margin distinct, sometimes flexuous; stem and cup, which together form an inverse cone, sometimes marked externally with transverse ridges.—*M.J.B.*

Generally accompanied by a species of *Torula*.

Sporidia oblong or fusiform 1-3 septate, $\cdot 011\text{--}\cdot 02 \times \cdot 003\text{--}\cdot 004$ m.m.—*Nyl.*

Sporidia with 2-4 nuclei, or 1-3 septate, straight or slightly curved $\cdot 010\text{--}\cdot 018 \times \cdot 003$ m.m.—*Karst.*

2147. Helotium lenticulare. *Fr.* "Lenticular Helotium."

Convex, adpressed, firm, yellow; stem papillæform, blackish.—*Berk. Outl. p. 372. Peziza lenticularis, Fr. S.M. ii. p. 133. Eng. Fl. v. p. 203. Bull. t. 300. Fl. Dan. t. 1294, f. 1. Fckl. exs. no. 1151.*

On old stumps.

Sporidia ovate-oblong, hyaline, simple, with one or two nuclei.

2148. Helotium ochraceum. *Fr.* "Ochraceous Helotium."

Ochrey-brown, minute, gregarious, thick, carnose, obconic; hymenium minutely granular, at length plane or sub-convex.—*Berk. Outl. p.* 372. *Peziza ochracea, Grev. t.* 5. *Eng. Fl. v. p.* 204.

On old stumps. Autumn.

Not 1 line broad, thick, puckered, or rugose at the base; margin equal or irregular, rounded, and depressed; hymenium sprinkled with minute shining particles, resembling grains of brown sugar. In drying it does not change.—*Grev.*

2149. Helotium cribrosum. *Berk.* "Black Helotium."

Black, solitary, rather large, very concave; hymenium cribriform, or full of lacerated, irregular pores and sinuses.—*Peziza cribrosa, Grev. Fl. ed. p.* 423. *Eng. Fl. v. p.* 203.

On sandy or gravelly ground.

Large, $\frac{1}{2}$ -1 in. broad, hemispherical, at length partly spreading, but always deeply concave, wholly black, but deeper within, somewhat rugose at the base externally; margin entire, even.—*Grev.*

2150. Helotium claxo-flavum. *Berk.* "Bright Yellow Helotium."

Yellow, gregarious, minute, obconical, at length somewhat plane; margin raised, obtuse, externally somewhat paler.—*Peziza claxo-flava, Grev. Fl. ed. p.* 424. *Eng. Fl. v. p.* 203.

On decayed wood and branches.

Very minute, the largest not half a line broad, always concave; whole plant very bright yellow; hymenium darker.—*Grev.*

2151. Helotium salicellum. *Fr.* "Willow.twig Helotium."

Ochraceous, becoming pallid, firm, adpressed, plane; stem very short, pallid; sporidia fusoid-oblong with 2-4 nuclei.—*Berk. Out. p.* 372. *Peziza salicella, Fr. S.M. ii. p.* 133. *Ann. N.H. no.* 573.* *Karst. Mon. Pez. p.* 134. *Fckl. exs. no.* 1164.

On willow twigs. Aug.—Oct.

Sporidia oblong, or fusiform oblong, $\cdot 023\text{--}\cdot 03 \times \cdot 005\text{--}\cdot 007$ m.m.—*Nyl.*

Sporidia slightly curved with 2-4 nuclei, or 1-3 spurious septa, $\cdot 025\text{--}\cdot 029 \times \cdot 005\text{--}\cdot 006$ m.m.—*Karst.*

2152. Helotium versiforme. *Fr.* "Twisted Helotium."

Gregarious, substipitate; head deformed, somewhat twisted, yellow-olive, externally purplish; sporidia elongated and obtuse at either end.—*Berk. Outl. p.* 372, *t.* 2, *f.* 6. *Peziza versi-*

formis, Fr. *S.M.* ii. p. 130. *Pers. Ic. & Des.* t. 7, f. 7. *Ann. N.H.* no. 159. *Karst. Mon. Pez.* p. 141. *Berk. exs.* no. 274.

On ash stumps. Apethorpe. [Up. Carolina.]

Sporidia elongated, $\cdot 008\text{--}\cdot 014 \times \cdot 003\text{--}\cdot 004$ m.m.—*Karst.*

2153. Helotium subsessile. *Sch.* "Umber Helotium"

Small, pallid; head plano-convex; disc pale-umber; stem very short, umber-brown at the base; asci clavate; sporidia oblong, sublanceolate, with two or more nuclei.—*Schum. Saell.* p. 415. *Berk. Outl.* p. 372. *Peziza helotioides*, Fr. *S.M.* ii. p. 135. *Ann. N.H.* no. 573. *Fl. Dan.* t. 1855, f. 3.

On dead branches. Oct. King's Cliffe.

Of a dull ochre rather than umber, the stem is very thick, obconical, and merely a prolongation of the pileus; the hymenium convex.—*M.J.B.*

2154. Helotium pruinoseum. *Jerd.* "Frosted Helotium."

Minute, sessile, or very shortly stipitate, entirely white, pruinose; disc pale flesh colour; sporidia elongato-cymbiform, 3-4 nucleate.—*B. & Br. Ann. N.H.* (1866), no. 1174, t. 5, f. 33.

On *Hypoxylon fuscum* and *Diatrype stigma*. Scotland.

The hymenium, which has sometimes a slight bluish tinge, is pruinose, as well as the outer surface; sporidia $\cdot 0006$ in. long (sometimes $\cdot 0004\text{--}\cdot 0005$ in. long), $\cdot 015$ m.m. ($\cdot 01\text{--}\cdot 012$ m.m.).

2155. Helotium rhizophilum. *Fckl.* "Grass-root Helotium."

Cups at first infundibuliform, then plane, immarginate, externally and stem whitish mealy; disc egg-yellow; asci linear, attenuated at each end; sporidia sub-distichous, cylindrical, straight, hyaline.—*Fckl. exs.* no. 1598. *Ciboria rhizophila*, *Fckl. Sym. Myc.* p. 312.

On rhizomes of grasses. May. Shere. (*E. C.*)

Cups $1\frac{1}{2}$ line broad; stem 3 lines long.

2156. Helotium herbarum. *Fr.* "Herbaceous Helotium."

Between fleshy and waxy, smooth, white; head plano-convex, adpressed; stem very short; sporidia elongated, straight, or curved.—*Berk. Outl.* p. 372. *Peziza herbarum*, Fr. *S.M.* ii. p. 136. *Eng. Fl.* v. p. 204. *Karst. Mon. Pez.* p. 146. *Karst. exs.* no. 81. *Rabh. F.E.* ii. no. 810. *Desm. exs.* 1, no. 603, ii. no. 568. *Fckl. exs.* no. 1147.

On dead leaves, stems, &c. Autumn. [Mid. Carolina.]

Gregarious, fleshy, adpressed, convex, sometimes depressed; stem extremely short.—*Eng. Fl.*

Sporidia fusiform, $\cdot 01\text{--}\cdot 014 \times \cdot 002\text{--}\cdot 0025$ m.m.—*Nyl.*

Sporidia straight or curved, uniseptate, $\cdot 009\text{--}\cdot 014 \times \cdot 002$ m.m.—*Karst.*

2157. Helotium epiphyllum. *Fr.* "Dead leaf Helotium."

Subsessile, smooth, convexo-plane, marginate, pallid-ochraceous.—*Berk. Outl. p. 372. Peziza epiphylla. Fr. S.M. ii. p. 137. Karst. Mon. Pez. p. 143. Fckl. exs. no. 1145.*

On dead leaves. [Mid. Carolina.]

Sporidia oblong, or fusiform oblong, simple, $\cdot 013\text{--}\cdot 018 \times \cdot 0035\text{--}\cdot 0045$ m.m. *Nyl.*

Sporidia straight or curved, $\cdot 012\text{--}\cdot 017 \times \cdot 003\text{--}\cdot 004$ m.m.—*Karst.*

2158. Helotium fagineum. *Fr.* "Beech Helotium."

Minute; head nearly plane, whitish; stem short, thick.—*Berk. Outl. p. 372, Peziza faginea. Fr. S.M. ii. p. 136. Scop. Ann. iv. t. 2, f. 3. Johnst. Fl. Berw. ii. p. 150. Eng. Fl. v. p. 204. Ann. N.H. no. 963*. Fckl. exs. no. 1146.*

On decayed twigs, straws, beech mast, &c.

Sporidia ovate-oblong, hyaline, continuous.

2159. Helotium punctatum. *Fr.* "Point-like Helotium."

Bright yellow, very minute, gregarious, punctiform, globular, at length plane, or subconvex, margin minutely crenate.—*Grev. t. 63. Eng. Fl. v. p. 206.*

On dead oak leaves. Near Edinburgh.

2160. Helotium marchantiæ. *Fr.* "Marchantia Helotium."

Rather thick, obconic, pale yellowish-brown, marginate, flexuose; disc flat; asci clavate; sporidia elliptic.—*Berk. Outl. p. 372. Peziza marchantiæ. Berk. Eng. Fl. v. p. 204.*

On fading *Marchantia hemispherica*. May. Whittlesea Mere.

Smooth $1\frac{1}{2}$ line broad, head quite confluent with the thick stem, so as to be irregularly and obtusely obconic; flesh white; hymenium thin.—*M. J. B.*

2161. Helotium ferrugineum. *Fr.* "Rusty Helotium."

Substipitate, obconic, disc concave, ferruginous-yellow, externally and tumid margin pallid yellow.—*Fr. S.V.S. p. 356. Peziza ferruginea. Fr. S.M. ii. p. 134. Bull. t. 300, var. Ann. N.H. no. 962.*

On dead wood. Twycross.

Gen. 298.

PSILOPEZIA, Berk.

Indeterminate, immarginate, agglutinate; hymenium always exposed.—*Berk. Outl. p. 373.*

The typical representative of this genus has only been found once. It resembles a *Rhizina* more than a *Peziza*, though at first included with the latter, but it has not the peculiar roots of the former. The spores differ also from those in *Rhizina*.

2162. Psilopezia Babingtonii. *Berk.* "Babington's Psilopezia."

Small, convex above, mouse brown, fixed by the margin; beneath concave, pale watery-brown, slightly rugose, with obsolete fibrils; spores broadly elliptic; paraphyses linear, clavate.—*Berk. Outl. p. 373. Peziza Babingtonii. Ann. N.H. no. 554.*

On rotten wood. Grace Dieu Wood, Leicestershire.

Cup $\frac{1}{2}$ in. or more broad, contracting greatly in drying, irregular in outline, convex above, mouse brown, concave beneath, and slightly wrinkled, pale watery brown, fixed by the border; asci linear; spores broadly elliptic; paraphyses linear, their apices clavate.

Gen. 299.

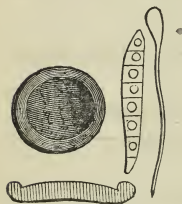
PATELLARIA, Fr.

Fig. 333.

Receptacle patellæform, margined, always open; hymenium even, subsistent, but dusty, from the breaking up of the asci; asci fixed.—*Berk. Outl. p. 373. Fr. S.M. ii. p. 158.*

(Fig. 333.)

2163. Patellaria atrata. *Fr.* "Large Black Patellaria."

Subcoriaceous, patellæform, sessile, plane, black, margin swollen; disc subpruinose; asci cylindrico-clavate; sporidia subclavate, 5-7 septate.—*Fr. S.M. ii. p. 160. Eng. Fl. v. p. 208. Hedw. t. 21, f. A. Nees. f. 265 B. Lecanidion atrum. Rabh. Hdbk. p. 342. Fckl. exs. no. 1118.*

On dead wood.

[United States.]

Sporidia (.0018-.0025 in.) .045-.06 m.m. long; paraphyses clavate.—*C. E. B.*

Dr. Capron has a black *Patellaria* similar to, but smaller than *P. atrata*, in which the sporidia are biserial, broadly clavate, rounded at each end, 9 septate, with a nucleus in each cell, except the terminal, .0015-.0020 in. long (Fig. 333.)

**2164. *Patellaria rhabarbarina.* Berk. “Rhubarb-coloured
Patellaria.”**

Minute, sessile, disseminated, plane, or slightly convex, ochraceo-ferruginous, externally clothed with tawny, mealy pubescence; flesh bright rhubarb-coloured; asci clavate; sporidia oblong; paraphyses spathulate.—*Berk. Outl.* p. 373. *Rav. exs.* v. no. 46. *Peziza rhabarbarina.* *Eng. Fl.* v. p. 197. *Berk. exs.* no. 271. *Ann. N.H.* no. 89. *Pez. ardenensis.* *Mont. Ann. Sc. Nat.* v. p. 287. *Patellaria rubi.* *Lib. exs.* no. 231. *Pezicula rhabarbarina.* *Tul. Carp.* iii. p. 183. *Helotium rubi.* *Rabh. F.E.* 717. *Fckl. exs.* no. 2075.

On dead bramble.

[United States.]

**2165. *Patellaria citrina.* B. & Br. “Lemon-coloured
Patellaria.”**

Cups plane, externally pallid; hymenium lemon-coloured; asci clavate; sporidia filiform.—*Ann. N.H.* no. 583. *Berk. Outl.* p. 373. *Ascobolus citrinis.* *Chev. F. Ill.* i. t. 31.

On rose twigs in a running stream. April. Near Swansea.

It has a broad, flat, yellow hymenium, with a pale border. The asci are clavate, and contain long filiform sporidia.

**2166. *Patellaria clavispora.* B. & Br. “Club-spored
Patellaria.”**

Soft, when young nearly globose, when older expanding, subirregular, pitch-brown; sporidia clavate, 4-6 septate.—*B. & Br. Ann. N.H.* no. 774.

On twigs of privet. Nov. Lucknam, Wilts.

Substance beneath the hymenium paler; asci cylindrical; sporidia elongated, clavate (‘001 to ‘0014 in.) ‘025-‘035 m.m. long, 4-6 septate; paraphyses branched, bearing at their tips one or more dark bodies, sometimes arranged like the joints of a necklace. The fructification is so remarkable that there can be no difficulty in recognising it, though its external appearance does not differ greatly from some other species. An American species *P. Ravenalii* B. has a similar development of the tips of the paraphyses.

2167. *Patellaria livida.* B. & Br. “Livid Patellaria.”

Gregarious, often crowded, subhemispherical, sessile, olivaceous-yellow, margin whitish; externally minutely silky; asci subfusiform; sporidia oblong, or elliptic.—*B. & Br. Ann. N.H.* no. 775.

On fallen firs. Dec. Gopsal.

2168. **Patellaria atro-alba.** *Cooke.* "Black and white
Patellaria."

On decorticated sticks. Shere (E. C).

2169. *Patellaria discolor*. *Mont.* "Umber *Patellaria*."

On fallen branches. [Low. Carolina.]

Orbicular, shield-like, depressed, somewhat immersed, black; asci clavate; sporidia oblong, obtuse at either end, slightly curved. 4-5 septate.—*Ann. N.H. no. 965, t. 16, f. 18.*

On dead oak. Dec. Barking.

Closely resembling *P. atrata*, but differing materially in the fruit.

2171. *Patellaria atro-vinosa*. *Blow*. "Purplish Patellaria."

Gregarious; disc minute, round, or of irregular outline, almost black, distinctly margined; margin of a vinous purple colour; sporidia almost colourless, but with a greenish tinge, narrowly almond-shaped or curved; endochrome tripartite.—*Curr. Linn. Trans.* xxiv. p. 155, t. 25, f. 31. *B. & Br. Ann. N.H.* no. 1078.

Gopsal, near Twycross.

The description is taken from the dried plant. The specimens grew in a densely crowded manner, and the difference in colour between the disc and margin is very striking. Sporidia ('0009 in., '022 m.m. long.

2172. *Patellaria aquatica.* Curr. "Aquatic *Patellaria*."

Disc minute, scarcely a line wide, of a brownish tinge, distinctly margined, usually quite round and compact; sporidia colourless, 1-3 septate.—*Curr. Linn. Trans.* xxiv. p. 155, t. 25, f. 23. *B. & Br. Ann. N.H.* no. 1079.

On dead rushes, in water. Weybridge. May, 1862.

The shape of the sporidia varies from cylindrical (and uniseptate) when young, to elliptical (2-3 septate), when mature ('0009-'0011 in.) '022-'027 m.m. long. The excipulum is formed of small distinct brown cells.

2173. *Patellaria palustris.* Curr. "Swamp *Patellaria*."

Disc very dark bluish-gray, almost black, margined, round, or irregular, not a line wide; excipulum composed of small, distinctly outlined cells; sporidia colourless, narrowly turbinate, elliptical or curved.—*Curr. Linn. Trans.* xxiv. p. 155, t. 25, f. 35. *B. & Br. Ann. N.H.* no. 1080.

On dead rushes in water. Paul's Cray. May, 1862.

Sporidia ('0004-'0005 in.) '01-'0125 m.m. long.

2174. *Patellaria olivacea.* Batsch. "Olive *Patellaria*."

Disc at first circular, dark olive-green; margin greenish-brown, strongly incurved, ribbed and granular; disc ultimately effused, dark olive-green, with a narrow brown margin, the latter very slightly incurved; sporidia elliptical, or slightly turbinate, clear bluish-green, uniseriate, binucleate.—*Rhizina nigro-olivacea*, *Curr. Linn. Trans.* xxiv. p. 494, t. 51, f. 10-12. *Patellaria olivacea*, *Batsch. f.* 51. *B. & Br. Ann. N.H.* no. 1077, t. 15, f. 22.

On rotten willow.

It runs over the wood in an irregular manner, like the thallus of a *Peltidea*. In its young state it is truly *Peziza*-like, and very beautiful; sporidia ('0003-'0004 in.), '0076-'01 m.m. long; disc at first $\frac{1}{8}$ to $\frac{1}{4}$ in., ultimately $\frac{1}{2}$ in. or more across.

2175. *Patellaria bicolor.* Curr. "Two-coloured *Patellaria*."

Disc variable in size, bright golden-yellow, fringed with rough hairs, sometimes of the same colour as the disc, sometimes of a beautiful scarlet, occasionally there is a tuft of hairs in the middle of the disc, corresponding with the point of attachment

to the wood; sporidia colourless, biseriate, slightly curved, 3-septate.—*Curr. Linn. Trans.* xxiv. 494, t. 51, f. 15, 16.

On wood somewhat decayed.

It might at first sight be taken for a *Peziza*, but the toughness of its texture, and its septate sporidia point clearly to the genus *Patellaria*; disc not more than $\frac{1}{2}$ in. broad; sporidia (·0007-·0008 in.) ·0177-·02 m.m. long.—*F.C.*

2176. *Patellaria constipata.* *Blow. MSS.* “Fir-bark *Patellaria.*”

Gregarious, or in a short series, irregular, compressed and contorted, shortly stipitate, furfuraceous, honey-coloured or brownish; sporidia biseriate, cylindrical obtuse, triseptate, slightly constricted, hyaline, or yellowish.

On bark of firs. Gopsal. (Rev. A. Bloxam.)

2177. *Patellaria lignyota.* *Fr.* “Sooty *Patellaria.*”

Sessile, dry, convexo-plane, then expanded, blackish; margin tumid; disc dingy; sporidia elliptical, uniseptate, brownish.—*Rabh. no.* 1152. *Peziza lignyota*, *Fr. S.M.* ii. p. 150. *Ann. N.H.* no. 579.

On dead wood. Feb. Wraxall. Shere.

Scattered or subgregarious, $\frac{1}{4}$ line broad, thin, horny when dry, black, softer when moist; disc sooty-black, subperennial; sporidia somewhat resembling those of a *Diplodia*.

2178. *Patellaria parvula.* *Cooke.* “Little Black *Patellaria.*”

Minute, scattered, black, somewhat erumpent, thin, contorted when dry; margin linear; sporidia elongated-elliptical, rounded at the ends, triseptate, hyaline.

On bleached decorticated sticks. Shere. (E.C.)

Sporidia (·0003 in.) ·02 m.m. long.

2179. *Patellaria lecideola.* *Fr.* “Lecidea-like *Patellaria.*”

Sessile, minute, somewhat horny, concave, black, seated upon a cinereous spot-like crust.—*Peziza lecideola*, *Fr. S.M.* ii. p. 151. *Fr. Obs.* i. t. 4, f. 1. *Excipula lecideola*, *Fries. exs.* no. 157.

On dead wood.

Gen. 300.

SPHINCTRINA, Fr.

Excipulum almost horny, naked, pierced with a narrow, quite entire mouth; disc at length dusted with the sporidia.—*Berk. Outl. p. 373.* (Fig. 334.)



Fig. 334.

2180. Sphinctrina turbinata. Fr.
 “Top-shaped Sphinctrina.”

Receptacles turbinate, sub-sessile, black, shining; disc punctiform, black, opaque; asci cylindrical; sporidia globose, brown.—*Fr. S.V.S. p. 366. Sphaeria sphinctrina, Sow. t. 386, f. 1. Bull. t. 444, f. 1. Calicium turbinatum, Pers. disp. Supp. 56. Fckl. exs.*

no. 1116. Ach. Meth. p. 56. Linds. Pop. Lich. t. xvi. f. 16-19.

On *Pertusaria*.

[United States.]

This species is inserted here, although I do not consider it a fungus, but rather a lichen. (Fig. 334.)

2181. Sphinctrina tigillaris. B. & Br. “Rafter Sphinctrina.”

Stem short, cylindrical; head elliptic; sporidia oblong, uniseptate.—*B. & Br. Ann. N.H. (1865), no. 1093.*

On an old *Polyporus*, from a beam in King’s Cliffe Church, and on wood. Batheaston.

Extremely minute, looking at first like a little *Stilbum*. It gives off a few threads on the surface of the matrix. The stem consists of little oblong cells. Sporidia (.00015-.0003 in.) .0035-.0075 m.m. long.

Gen. 301.

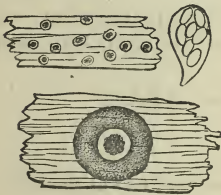
LAQUEARIA, Fr.

Fig. 335.

Disc waxy, persistent, without any hypothecium, but covered with a horny, coriaceous, dimidiate, superior, deciduous, excipulum; mouth contracted.—*Berk. Outl. p. 373.* (Fig. 335.)

2182. Laquearia sphæralis. Fr. “Urn-shaped Laquearia.”

Erumpent, hemispherical, brown black, urceolate; mouth contracted, entire; disc plane, black; asci oblong, sessile;

sporidia minute, oblong-elliptic, hyaline, simple.—*Fr. S.V.S. p. 366. Berk. Outl. p. 373. Stictis sphaeralis, Fr. S.M. ii. p. 194. Eng. Fl. v. p. 213. Fckl. exs. no. 2066.*

On dead branches of ash. Winter. (Fig. 335.)

Gen. 302.

TYMPANIS, Tode.

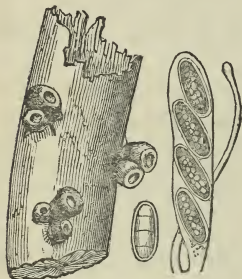


Fig. 336.

Receptacle margined, cyathiform, horny; hymenium at first veiled, then breaking up.—*Fr. S.M. ii. p. 173. Berk. Outl. p. 373.* (Fig. 336.)

2183. Tympanis frangulae.

Fr. "Buckthorn Tympanis."

Sessile, turbinato-truncate, roundish, opaque, blackish; disc umber, margin sub-obliterated; asci broadly cylindrico-oblong, very obtuse; sporidia ovate or ovate-oblong, at length 3-4 septate, brown.—*Fr. S.M. ii. p. 174. Fckl. exs. no. 764. Dermatea frangulae, Tul. Carp. iii. p. 161. Ann. Sc. Nat. xx (1853), t. 16, f. 1-8. Pezizicula frangulae. Fckl. Sym. Myc. p. 279, t. 4, f. 46.*

On *Ehamnus frangula*. Shere (Surrey), and Highgate (Middlesex).

The stylosporous condition is not uncommon late in the autumn, and during winter; the ascigerous state was collected in April. (Fig. 336.)

2184. Tympanis alnea. Pers. "Alder Tympanis."

Substipitate, opaque, blackish-umber; cups subflexuose, obsoletely marginate; asci oblong; sporidia filiform, continuous.—*Fr. S.M. ii. p. 174. Eng. Fl. v. p. 210. Fckl. exs. no. 768. Cenangium alneum. Fckl. Sym. Myc.*

On alder. Appin.

Minute, at first resembling a caespitose *Sphaeria*, externally brownish.

2185. Tympanis fraxini. Schm. "Ash Tympanis."

Subsessile, turbinato-truncate, shining, black; disc plane, rugose, marginate.—*Fr. S.M. ii. p. 174. Eng. Fl. v. p. 210. Cenangium fraxini. Tul. Ann. Sc. Nat. xx. p. 140. Fckl. exs. no. 1125.*

On ash branches. Winter and spring. [Mid. Carolina.]

Breaking through the bark in small fascicles, consisting of a few individuals only, which increase in breadth from the base; margin prominent, obtuse, flexuous; disc opaque, rather solid, punctato-rugose.—*Fries.*

2186. Tympanis conspersa. *Fr.* "Apple Tympanis."

Cæspitose, at first closed, sphæriæform, naked, black, soon open, whitish and pulverulent from the fragments of the broken veil.—*Fr. S.M.* ii. p. 175. *Grev. t.* 335. *Berk. exs. no.* 160. *Ust. Ann. i. t. i, f. 6.* *Fckl. exs. no.* 769. *Nees. f.* 231. *Eng. Fl. v. p.* 211. *Tul. Ann. Sc. Nat. xx.* (1853), t. 16, f. 15-16. *Cenangium conspersum.* *Fckl. Sym. Myc.* p. 272.

On apple, hawthorn, &c.

[Mid. Carolina.]

2187. Tympanis ligustri. *Tul.* "Privet Tympanis."

Sessile, subelongated, rather shining, black; disc concave, marginate; asci broadly cylindrical; sporidia, minute, ovate, or ovate-oblong, numerous.—*Tul. Carp. iii. p.* 154. *T. saligna.* *Fr. S.M.* ii. p. 176 (*in part.*) *Tode i. t. 4, f. 57.* *Ann. N.H. no.* 584. *Fckl. exs. no.* 767. *Berk. Outl. t. 1, f. 10.* *Rabh. exs. no.* 229. *Cenangium ligustri.* *Fckl. Sym. Myc.* p. 268.

On privet.

"A very curious circumstance has occurred in this species. In the same hymenium the fruit of a *Diplodia* and that of a *Tympanis* were present."—*B. & Br.*

Gen. 303.

CENANGIUM, Fr.



Fig. 337.

Receptacle coriaceous, closed at first, then open, marginate, covered with a thick cuticle; hymenium persistent.—*Fr. S. M.* ii. p. 178. *Berk. Outl. p.* 374. (Fig. 337.)

2188. Cenangium ribis. *Fr.* "Currant Cenangium."

Cæspitose, nearly naked, blackish-brown, cup subturbinate, margin fimbriate, sub-connivent; disc pallid; stems connate, in a tubercle; asci linear, obovate; sporidia crowded, linear, clavate, straight at length 3-6 septate.—*Fr. S.M.* ii. p. 179. *Schm. exs. no.* 75. *Fries. exs. no.* 131. *Fckl. exs. no.* 2277. *Ann. N.H. no.* 585. *Tul. Ann. Sc. Nat. xx.* (1853), t. 16, f. 9-11. *Tul. Carp. iii. p.* 164, t. 19, f. 1-9.

On currant twigs.

Sporidia '035-'038 m.m. long, '004-'005 m.m. broad.

2189. *Cenangium cerasi*. Fr. "Cherry Cenangium."

PYCNIDIA. Perithecia pustulate, innate, sub-cylindrical, deformed by mutual pressure; ostiola white; spores curved above. *Micropora drupacearum*. Lev. Ann. Sc. Nat. (1846), p. 283. See no. 1375, ante.

ASCOPHORE. Subcæspitose, irregular, at first tuberculate, rugose, reddish-clay colour, at length expanding into blackish cups, plane above; sporidia oblong, rounded at the ends, curved, hyaline, simple.—Fr. S.M. ii. p. 179. Eng. Fl. v. p. 211. Pers. Ic. pict. t. 20, f. 1. Berk. exs. no. 161. Moug. exs. no. 494. Tul. Ann. Sc. Nat. xx. (1853), t. 16, f. 12, 13. Pez. *cerasi*. Grev. Fl. Ed. p. 426.

On wild cherry, &c.

[S. Carolina.]

2190. *Cenangium prunastri*. Fr. "Sloe Cenangium."

Subcæspitose, rather horny, naked, blackish; cups at first awl-shaped, then open, concave, substipitate.—Fr. S.M. ii. p. 180. Berk. exs. no. 163. Eng. Fl. v. p. 211. *Dermatea prunastri*. Fckl. exs. nos. 1843, 1126. *Peziza prunastri*. Grev. Fl. Ed. p. 425.

On sloe.

[Mid. Carolina.]

Bursting through the bark in the guise of awl-shaped bodies, which gradually become depressed in the centre, and at length expand into a cup. *C. cerasi* sometimes puts on the same form.—M. J. B.

2191. *Cenangium aucupariæ*. Fr. "Mountain Ash Cenangium."

Cæspitose, black, sprinkled with whitish meal; cups at first elongated, somewhat cylindrical, closed, at length open at the apex.—Fr. S.M. ii. p. 181. Eng. Fl. v. p. 212. *Peziza aucupariæ*. Grev. Fl. Ed. p. 426.

On mountain ash. Autumn.—Spring.

2192. *Cenangium pulveraceum*. Fr. "Powdery Cenangium."

Gregarious, blackish, covered with a dense cinereous powder; cup subglobose, with the simple stem turbinate.—Fr. S.M. ii. p. 181. Eng. Fl. v. p. 212. A. & S. t. 8, f. 2.

On wood.

[Up. Carolina.]

2193. *Cenangium fuliginosum*. Fr. "Sooty Cenangium."

Cups irregular, dingy-brown, crowded into broad patches; disc pale, growing in a widely effused, more or less ambient,

subiculum; paraphyses simple or forked; asci clavato-linear; sporidia filiform-lanceolate, multi-septate.—*Fr. El.* ii. p. 23. *Eng. Fl.* v. p. 212. *Tul. Carp.* iii. p. 166.

On sallow branches.

Sporidia.

2194. Cenangium ferruginosum. *Fr.* "Rust-coloured Cenangium."

Gregarious, coriaceo-membranaceous, subsessile, rugose, sub-pruinose, reddish-black, mouth compressed, inflexed, spreading when moist; disc yellowish; asci obovate-oblong; sporidia ovate or ovate-oblong, obtuse.—*Fr. Scler. exs.* no. 292. *Eng. Fl.* v. p. 212. *Grev. t.* 197. *Fckl. exs.* no. 1122. *Clithris ferruginosum.* *Fr. S.M.* ii. p. 187. *Moug. exs.* no. 399.

On Scotch fir.

[Mid. Carolina.]

Cups covered with ferruginous powder.

Sporidia .01 m.m. long, each containing one or two nuclei. (*Fig.* 337.)

2195. Cenangium rubi. *Fr.* "Raspberry Cenangium."

Innato-erumpent; cups somewhat horny, even, nearly plane, black; at length the disc open, becoming pale.—*Grev. t.* 334. *Excipula rubi.* *Fr. exs.* no. 101, *S.M.* ii. p. 190. *Eng. Fl.* v. p. 296.

On raspberry.

Gen. 304.

ASCOBOLUS, Tode.

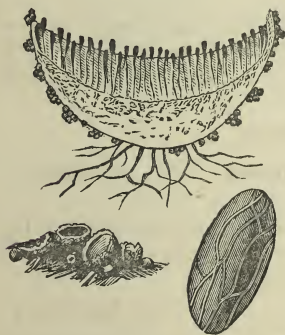


Fig. 338.

Receptacle orbicular, marginate; disc patellæform; asci exploded.

(*Fig.* 338.)

A. Epixyles vel terrestres.

2196. Ascobolus denu-
datus. *Fr.* "Naked
Ascobolus."

Gregarious, yellowish-green, smooth, turbinate, substipitate; disc plane; asci clavate; paraphyses simple; sporidia violet, ir-

regularly rugose, ovate, or elliptic.—*Fr. S.M.* ii. p. 164. *Cooke Seem. J. Bot. May*, 1864, fig. 2. *Fckl. exs. no.* 1849. *B. & Br. Ann. N.H. no.* 1083, t. 16, f. 24. *Boud. Ann. Sc. Nat.* (1869), x. t. 5, f. 3.

On old fir poles. On the ground attached to little roots, &c. Oct. Marlborough Forest.

Sporidia violet coloured when mature, irregularly rugose, ovate or elliptic ('0007-'0008 in.) '0177-'02 m.m. long.

2197. *Ascobolus viridis.* Curr. "Green Ascobolus."

Sessile, plane, or very slightly concave, of a dark, dingy, yellowish-green colour, externally very furfuraceous, almost tomentose; sporidia elliptic-acuminate, rugoso-striate, amethyst-purple.—*Curr. Linn. Trans.* xxiv. p. 154, 1863. *Cooke Seem. Journ.* 1864. *Boud. Ann. Sc. Nat.* (1869), x. t. 5, f. 4. *B. & Br. Ann. N.H. no.* 1081.

On clay ground. Sept. Oct. Near Bristol.

2198. *Ascobolus Crouani.* Cooke (non Boud). "Vermillion Ascobolus."

Vermillion-red, sessile, fleshy, smooth, first urceolate, then hemispherical; hymenium flat, surrounded by a more or less incised, soft, white, membranaceous frill; asci wide, straight, or incurved; sporidia when young having a large nucleus in the centre, surrounded by a circle of smaller ones, then verrucose, and finally reticulated; paraphyses filamentous, simple, or forked, thickened at the apex, and much longer than the asci.—*Fckl. exs. no.* 1853. *Cooke exs. no.* 285. *Cooke Seem. J. Bot. May*, 1864, f. 3. *B. & Br. Ann. N.H. no.* 1085, t. 16, f. 26. *Ascobolus miniatus*, *Crouan (non Preuss)*, *Ann. des. Sc. Nat.* 1858, vol. x. p. 197, t. 13, f. i. 44—47. *Crouania miniata*, *Fckl. Sym. Myc.* p. 320.

On the earth, amongst small mosses. Autumn.

Receptacle composed of round or oval cells, very small, closely packed, intermixed with articulated, hyaline, anastomosing, or confluent filaments; "sporidia when mature beautifully reticulated, like those of some truffles." *Boudier (Ann. Sc. Nat.* (1869), x. p. 257) says that this is not an *Ascobolus*, but a *Peziza (Humaria)*.

2199. *Ascobolus jungermanniæ.* B. & Br. "Verdigris Ascobolus."

Scattered, sessile, fleshy, smooth, deep verdigris-green; cups plane, marginate; asci slightly clavate; sporidia elliptic, intense verdigris-green; paraphyses clavate at the tips, greenish.

—*B. & Br. Ann. N.H. no. 1082, t. 16, f. 23. Peziza jungermanniæ, Nees. Fr. S.M. ii. p. 144. Pseudopeziza jungermanniæ, Fckl. Sym. Myc. p. 291.*

On *Jungermanniæ*. Jedburgh, and near Shere.

Asci slightly clavate, at length projecting; sporidia elliptic (.0006 in.) .015 m.m. long, sometimes rather irregular, of an intense verdigris-green when fresh, as are also the clavate-tipped paraphyses.

B. *Stercoricoles*, Boud.

2200. *Ascobolus furfuraceus*. *Pers.* "Mealy Ascobolus."

Sessile, slightly concave, brown or greenish, externally furfuraceous; asci clavate, with an inner separable membrane; sporidia almond-shaped, biseriate, rugose, amethyst-purple.—*Pers. Obs. i. t. 4, f. 3-6. Fr. S.M. ii. p. 163. Grev. t. 307. Berk. Eng. Fl. v. p. 209. Outl. p. 374. Currey Linn. Trans. xxiv. t. xxv. f. 9, 10. Rav. exs. vi. no. 81. Fckl. exs. no. 1132. Cooke Seem. Journ. May, 1864, fig. 1. Boud. Ann. Sc. Nat. (1869), x. t. 6, f. 6-10. Peziza stercoraria, Bull. t. 376. 538, f. 4. Sow. t. 18, 389. f. 3-6. P. fusca, Bolt. t. 109, f. 2.*

On cow dung, all the year. Very common. (*Fig. 338.*)
[United States.]

2201. *Ascobolus vinosus*. *B.* "Purplish Ascobolus."

Sessile, at first globose, then depressed, smooth, dull purple, orifice lacinate; asci nearly linear, thickest at their tips; sporidia elliptical, rugose, at first colourless, then purple, eventually brown.—*Berk. Eng. Fl. v. p. 209. Outl. p. 374. Cooke Seem. J. Bot. May, 1864. Berk. exs. no. 159. B. & Br. Ann. N.H. no. 1083* t. 16, f. 25. Boud. Ann. Sc. Nat. (1869), x. t. 6, f. 11. Fckl. exs. no. 1852.*

On rabbit dung.

Sporidia (.0006-.0008 in.) .015-.0177 m.m. long. Stylospores occur in this species occasionally at the tips of the paraphyses; cup 1 line broad, adhering by branched threads, at first globose, then nearly plane, opening with about five laciniae, which, as it expands, are again divided.—*M.J.B.*

2202. *Ascobolus ærugineus*. *Fr.* "Dull-green Ascobolus."

Gregarious, sessile, nearly plane, marginate, smooth, greenish; asci clavate, attenuated downwards; sporidia elliptic, violet, or violet purple.—*Fries. Obs. ii. p. 310. Sys. Myc. ii. p. 164. Cooke*

Seem. J. Bot. May, 1864. *Boud. Ann. Sc. Nat.* (1869), x. t. 7, f. 12. *A. marginatus*, *Schum. Saell.* ii. p. 437.

On horse-dung. August.

2203. *Ascobolus glaber.* *Pers.* "Smooth *Ascobolus*."

Sessile, minute, smooth, shining, somewhat convex, marginate, colour variable from white or orange to vinous-brown; asci nearly equal; sporidia at first hyaline, then amber-coloured, at length deep violet, reticulated.—*Pers. Obs.* i. t. 4, f. 7. *Syn. p.* 667. *Fr. S.M.* ii. p. 164. *Fckl. exs. no.* 1134. *Berk. Eng. Fl.* v. p. 209. *Outl. p.* 374. *Cooke Seem. J. Bot. May*, 1864, fig. 4. *B. & Br. Ann. N.H.* no. 1085*, t. 16, f. 27. *Boud. Ann. Sc. Nat.* (1869), x. t. 7, f. 13-15.

On cow dung and rabbits' dung. Autumn. Bathford and Ascot. [Mid. Carolina.]

Sporidia (·0005 in. broad, ·0009-·001 in long), ·0127 × ·022-·025 m.m.

2204. *Ascobolus immersus.* *Pers.* "Large-spored *Ascobolus*."

Very small, clear greenish-yellow, smooth, subcylindrical or hemispherical; hymenium flat; asci large and wide; sporidia very large, ovoid, surrounded by a wide, hyaline membrane, purple violet; paraphyses colourless, filiform.—*Pers. Obs.* t. 4, f. 7, d. e. *Boud. Ann. Sc. Nat.* (1869), x. t. 8, f. 17. *Nees. f.* 297. *A. macrosporus.* *Crouan Ann. des Sc. Nat.* 1857, vol. vii. p. 74, t. 4, 5, 8. *Cooke Seem. J. Bot. May*, 1864, fig. 7. *B. & Br. Ann. N.H.* no. 1089, t. 17, f. 33.

On old cow dung, and on sheep and horse dung. Autumn. Batheaston.

Receptacles small; the cells which compose it anastomose, and form a reticulated tissue.

"Mr. Currey observes that the amethyst-coloured epispore tears off in riband-like shreds."

Sporidia (·0025 in.) ·06-·065 m.m. long.

2205. *Ascobolus brunneus.* *Cooke.* "Brown *Ascobolus*."

Cups minute, globose, then depressed, sessile, externally pilose, pale ochre; asci broadly clavate, short; paraphyses filiform; sporidia elliptic, at first hyaline, and granular, at length brown.—*Cooke exs. no.* 286 (1867). *Hedwigia* vi. p. 154, not *A. brunneus.* *Boud. Ann. Sc. Nat.* (1869.)

On cow dung. Shere.

Sporidia (·001-·0015 in. long, ·0006 in. broad), ·025-·035 × ·015 m.m.

C. SACCOBOLUS. *Boud.***2206. Ascobolus Kerverni.** *Crouan.* "Golden Ascobolus"

Very small, fine golden-yellow, sessile, hemispherical, sometimes subcylindrical; hymenium flat or convex; asci wide, incurved, spores elliptical, first white, then rosy, and finally of a beautiful violet, disposed at the summit of the ascus, in an oblong mass, enclosed in a hyaline membrane; paraphyses simple, filiform, a little thickened at their summit, and of a yellow colour.—*Crouan. Ann. des Sc. Nat.* 1858, vol. x. p. 193, t. 13, f. B. 7-11. *Fckl. exs. no.* 1836. *Cooke Seem. J. Bot. May*, 1864, fig. 8. *B. & Br. Ann. N.H. no.* 1090 t. 17, f. 34.

In small groups upon old cow dung. Oct. Bathford.

Receptacle composed of a thin filamentous tissue, anastomosing in a reticulated manner.

"The sporidia are dark violet when mature, and not reticulated. When young they nearly fill the ascus, but when mature are confined to a small space. When their proper envelope bursts, a number of minute globular bodies escape, apparently of a different character from the coarser ones which fill the space between the primary and secondary membranes when they are immature."—*B. & Br.*

2207. Ascobolus depauperatus. *B. & Br.* "Pallid Ascobolus."

Cups minute, plane, pallid, then vinous; asci short; sporidia obtusely fusiform, lurid violet, even; paraphyses slightly incrassated.—*B. & Br. Ann. N.H. no.* 1084, t. 14, f. 6.

On dung of sheep, horse, and deer. Bathford, &c.

Cups minute, not exceeding 1-100th in. diameter, yellowish when young, becoming vinous, but sometimes when old, losing their purplish tint; sporidia as in *A. vinosus* and some others, collected in a distinct sac, ('0004-0005 in.) '01-0127 m.m. long, by ('00025 in.) '0065 m.m. wide, which is only half the dimensions of those of *A. vinosus*, the cups of which, moreover, are many times as large.—*B. & Br.*

D. ASCOPHANUS. *Boud.***2208. Ascobolus granuliformis.** *Crouan.* "Grain-like Ascobolus."

Sessile, sphaerical, pale yellow-ochre, translucent, opaque in the centre, smooth; asci very small, wide; sporidia hyaline, oval; paraphyses colourless, thickened into a club-shape at their apex.—*Crouan. Ann. des Sc. Nat.* 1858, vol. x. p. 196, t. 13, f. 27-31. *Fckl. exs. no.* 1850. *Cooke Seem. J. Bot. May*, 1864, fig. 5.

B. & Br. Ann. N.H. no. 1086, t. 17, f. 31. Ascophanus granuliformis. Boud. Ann. Sc. Nat. (1869), x. t. 10, f. 31.

On cow dung. Oct. Nov. Common.

Receptacle formed by an anastomosing, reticulated filamentous tissue, of an extreme thinness; sporidia (·0004-·0005 in.) ·01-·0127 m.m. long (·0003 in.) ·0076 m.m. wide.

2209. *Ascobolus microsporus.* B. & Br. "Small-spored *Ascobolus*."

Cups minute, whitish, depressed; asci elongated; sporidia elliptic, at length violet, even; paraphyses globose at the apex, filled with a greenish yellow endochrome.—*B. & Br. Ann. N.H. (1865), no. 1087, t. 16, f. 28. A. Cæmansii. Boud. Ann. Sc. Nat. (1869), x. t. 10, f. 30.*

On dung of cows and sheep. Batheaston.

Cups very minute, paler than in *A. granuliformis*, dirty-white or yellowish-brown; hymenium granulated with the tips of the asci, which are often furnished at the base with a little narrow oblique stem; sporidia (·0003 in.) ·0076 m.m. long, by (·00015 in.) ·0035 m.m. wide, quite smooth; tips of paraphyses filled with coloured endochrome, which makes them very conspicuous. This differs materially from *A. granuliformis* in the size of the fruit, which is proportionally narrower; the colour also is different.—*B. & Br.*

2210. *Ascobolus argenteus.* Curr. "Silvery *Ascobolus*."

Gregarious, exceedingly minute, barely visible to the naked eye, subpyriform, of a silvery-white colour; sporidia elliptical, colourless.—*F. Currey, in litt. Cooke Seem. J. Bot. May, 1864, fig. 6. B. & Br. Ann. N.H. no. 1088, t. 17, f. 32. Ascophanus argenteus, Boud. Ann. Sc. Nat. (1869), x. t. 11, f. 32.*

On cow-dung. Nov. Eltham.

Sporidia (·0005 in.) ·0127 m.m. long (·0003 in.) ·0076 m.m. wide.

2211. *Ascobolus sexdecemsporus.* Crouan. "Sixteen-spored *Ascobolus*."

White, then whitish-grey, at length of a clear yellowish-white, minute, sessile, hemispherical; hymenium flat or slightly convex; asci small, wide, enclosing sixteen, ovoid, hyaline spores; paraphyses numerous, colourless; simple or branched below, straight or curved at the apex, where they are a little thickened.—*Fckl. exs. no. 1851. Crouan, Ann. des Sc. Nat. 1858, vol. x. p. 195, t. 13, f. E. 21-26. Cooke Seem. J. Bot. May, 1864, fig. 9. B. & Br. Ann. N.H. no. 1091, t. 17, f. 35. Ascophanus sexdecemsporus, Boud. Ann. Sc. Nat. (1869), x. t. 11, f. 35.*

In marshes, on the droppings of cows and horses. Oct. Hanham, near Bristol.

Receptacle non-gelatinous, composed of very small hexagonal cells. Sporidia ($\cdot 0006$ in.) $\cdot 015$ m.m. long.

2212. *Ascobolus cinereus*. Crouan. "Grey Ascobolus."

Small, grey, sessile, smooth, hemispherical, or irregular; disc plane or a little convex; asci large, clavate, attenuated at their base; sporidia sub-cylindrical, colourless, paraphyses simple, filiform.—*Ann. Sc. Nat. ser. iv. vol. x. p. 194, f. D. B. & Br. Ann. N.H. no. 1085, t. 17, f. 30. Ascophanus cinereus, Boud. Ann. Sc. Nat. (1869), x. t. 11, f. 37.*

On cow-dung. Batheaston.

Sporidia ($\cdot 0009$ m.) $\cdot 022$ m.m. long ($\cdot 0004$ in.) $\cdot 01$ m.m. wide.

2213. *Ascobolus carneus*. Pers. "Flesh-coloured Ascobolus."

Gregarious, minute, sessile, plane, immarginate, smooth, flesh-coloured.—*Pers. Syn. p. 676. Fr. S.M. ii. p. 165. Berk. Outl. Fung. p. 374. Fckl. exs. no. 1857. Cooke Seem. J. Bot. May, 1864. B. & Br. Ann. N.H. no. 1085*, t. 17, f. 29. Ascophanus carneus, Boud. Ann. Sc. Nat. (1869), x. t. 12, f. 38.*

On cow dung. Autumn.

"Asci in our specimens only $\cdot 0012$ in. long. They are more than twice as long in *A. granuliformis*. Unfortunately we can find no perfect sporidia."—*B. & Br.*

2214. *Ascobolus saccharinus*. B. & Curr. "Sparkling Ascobolus."

Scattered or crowded; disc almost hemispherical when young, afterwards expanded and plane, of a reddish-pink, or salmon-colour, when dry paler towards the margin; plant attached at the base by white downy threads; hymenium somewhat glistening, looking as if sprinkled with minute particles of brown sugar; sporidia elliptical, colourless.—*B. & Curr. Berk. Outl. p. 374. Cooke Seem. J. Bot. May, 1864, fig. 10. B. & Br. Ann. N.H. no. 1091*, t. 17, f. 36. Ascophanus saccharinus, Boud. Ann. Sc. Nat. (1869), x. t. 12, f. 40.*

On old leather, and also on old rag. Chislehurst, Kent.

Sporidia ($\cdot 0007$ - $\cdot 0008$ in.) $\cdot 0177$ - $\cdot 02$ m.m. long.

2215. *Ascobolus ciliatus*. Schm. "Fringed Ascobolus."

Sessile, subhemispherical, smooth, orange; disc plane; margin swollen, white, fringed with white hairs; asci large; sporidia

broadly elliptic; dark-violet when mature.—*Schmidt, Myc. Hefte*, i. p. 90. *Pers. M.E.* i. p. 340. *Fr. S.M.* ii. p. 164. *Eng. Fl.* v. p. 209. *Berk. Outl.* p. 374. *Cooke Seem. J. Bot. May*, 1864. *B. & Br. Ann. N.H.* no. 1083*, t. 14, f. 7. *Ascophanus ciliatus*, Boud. *Ann. Sc. Nat.* (1869), x. p. 253.

On cow-dung. Autumn.

Extremely like *Peziza stercorea*, but the hairs are white. The asci are very large for the size of the plant, and are not altered by drying.—*M. J. B.*

2216. Ascobolus testaceus. *B. & Br.* "Brick red *Ascobolus*."

Gregarious, waxy, sessile, unequal, smooth, sub-depressed, brick-red; asci broadly cylindrical; sporidia elliptical; surface granular; paraphyses slightly thickened upwards, subclavate.—*B. & Br. Ann. N.H.* no. 1082*, t. 14, f. 5. *Helotium testaceum*, *Berk. Outl.* p. 372. *Peziza testacea*, *Moug. Fr. El.* ii. p. 11. *B. & Br. Ann. N.H.* no. 576.

Old sacking and rabbits' dung.

The asci project in good fresh specimens, and the habitat indicates an *Ascobolus* rather than an *Helotium*.—*B. & Br.*

Gen. 305.

BULGARIA, Fr.

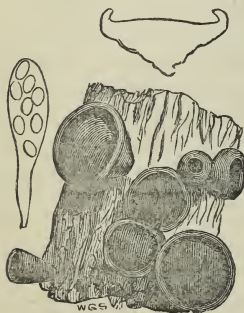


Fig. 339.

Receptacle orbicular, then truncate, glutinous within, at first closed; hymenium even, persistent, smooth.—*Berk. Outl.* p. 374.

(*Fig. 339.*)

2217. Bulgaria inquinans. *Fr.*
"Blackish Bulgaria."

Turbinate, firm, externally rugulose, furfuraceous, umber; disc becoming plane, black; asci long, obtuse; sporidia large, elliptic, brown.—*Fr. S.M.* ii. p. 167. *Tul. Ann. Sc. Nat.* xx. (1853), t. 15, f. 1-7. *Eng.*

Fl. v. p. 209. *Cooke exs.* no. 324. *Fckl. exs.* no. 1136. *Rav. exs.* v. no. 43. *Fl. Dan.* t. 464. *Schæff.* t. 158. *Batsch.* f. 50. *Hedw.* t. 6, f. 5. *Berk. Outl.* t. 22, f. 7. *Pez. nigra*, *Bull.* t. 460, f. 1. *Sow.* t. 423. *Nees.* f. 296. *Pez. polymorpha*, *Light.* ii. p. 1003. *Hoff. Cr.* ii. t. 6, f. 2.

On oak trunks, &c.

[United States.]

Tough, elastic, gelatinous, dark-brown, or chocolate, almost black, wrinkled, and rough externally; disc sometimes lacunose; stem in general blank, almost obsolete, sometimes fasciculate and confluent.—*M.J.B.*
(*Fig.* 339.)

2218. Bulgaria sarcoides. *Fr.* "Purplish Bulgaria."

STYLOSPORES—Cæspitose, soft, viscid, flesh-coloured, inclining to purple, at first club-shaped, then compressed, lobed, and plicate.—*Tremella sarcoides*, *Berk. Outl. t. 2, f. 7. Eng. Bot. t. 2450. Bolt. t. 101, f. 2. Bull t. 499, f. 5. Eng. Fl. v. p. 217.*

ASCOPHORE—Cæspitose, polymorphous, rather firm, flesh-red, externally somewhat venose; disc concave; asci clavate; sporidia oblong-lanceolate, straight, or unequal, with a central nucleus. *Fr. S.M. ii. p. 168. Eng. Fl. v. p. 240. Berk. Outl. t. 18, f. 6. Bolt. t. 101, f. 2. Schæff. t. 323, 324. Hedw. t. 7, f. B. Berk. exs. no. 273. Batsch f. 53. Jacq. Misc. t. 22. Bull. t. 101, f. 2. Fl. Dan. t. 1017, f. 1-2. vars. Coryne sarcoides, Tul. Carp. iii. p. 190, t. 17, f. 1-10.*

On old stumps.

[S. Carolina.]

Dr. Capron undoubtedly traced *Tremella sarcoides* through its stages to its perfection in this species, almost simultaneously and independently of the researches of M. Tulasne, which produced the same result. The *Tremella*, therefore, is an imperfect condition of the *Bulgaria*.

Gen. 306.

AGYRIUM, Fr.

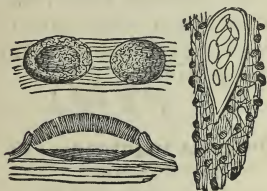


Fig. 340.

Receptacle compact, homogeneous, waxy, gelatinous when moist, innate, sessile, sphaerical, even, smooth, fructifying all round; asci fixed.—*Berk. Outl. p. 375.*
(*Fig.* 340.)

2219. Agyrium rufum. *Pers.* "Reddish Agyrium."

Gregarious, convex, or sphaerical, compact when moist, flesh-coloured, when dry red-brown; asci ovoid; sporidia oblong, pellucid.—*Eng. Fl. v. p. 220. Fr. S.M. ii. p. 232. Fries. exs. no. 280. Grev. t. 232. Corda. Ic. ii. f. 128. Stictis rufa, Pers. Obs. ii. t. 6, f. 6.*

On old dry fir wood.

[Up. Carolina.]

About $\frac{1}{2}$ line broad, often seated on a whitish spot. It is very probable that this should be classed with lichens rather than fungi. (*Fig.* 340.)

Gen. 307.

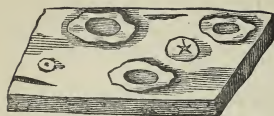
STICTIS, Pers.

Fig. 341.

Receptacle obsolete; hymenium even, determinate, orbicular and elliptic, immersed in the matrix, at first veiled.—*Berk. Outl. p. 375.*

(Fig. 341.)

Hymenium persistent	.	.	.	.	.	<i>Eustictis.</i>
„ deliquescent	.	.	.	.	.	<i>Xylographa.</i>
„ becoming dusty	.	.	.	.	.	<i>Propolis.</i>

2220. Stictis (Eustictis) radiata. Pers. “Radiated Stictis.”

Immersed, orbicular, border snow-white, somewhat lacerated, pulverulent; sporidia linear, straight, continuous.—*Fr. S.M. ii. p. 194. Eng. Fl. v. p. 213. Rav. exs. 1, no. 43. Berk. exs. no. 70. Tode. t. 7, f. 58. Nees. f. 294. Hoffm. Lich. t. 7, f. 4. Grev. t. 227. Buxt. exs. no. 80. Sturm. t. 61. Peziza marginata, Sow. t. 16.*

On wood, twigs, &c.

[United States.]

(Fig. 341.)

2221. Stictis (Eustictis) pallida. Pers. “Pallid Stictis.”

Gregarious, immersed, punctiform, pallid; mouth connivent, subelliptic.—*Fr. S.M. ii. p. 196. Eng. Fl. v. p. 213. Pers. Obs. ii. t. 6, f. 7.*

On wood. Appin.

[Mid. Carolina.]

Scattered, minute, elliptic, or subrotund, two individuals sometimes growing close together, and having a common partition, yellowish, surrounded by a narrow, spurious border of the same colour. The wood on which it grows is white.—*M.J.B.*

2222. Stictis (Eustictis) microstoma. Carm. “Small-mouthed Stictis.”

Very minute, punctiform, prominent, blackish, opening with a minute, round, or subelliptic orifice; spores triseptate, hyaline, granular; paraphyses branched.—*Berk. Outl. p. 375. Stictis microstoma, Eng. Fl. v. p. 213.*

On wood.

Scattered, at first nearly white, with a minute orifice, round which it gradually assumes a darker hue, and at length under a high magnifier, appears, when moist, of a sub-olivaceous black. Resembling a minute *Sphaeria*.—*M.J.B.*

Sporidia (.0007 in.) .0177 m.m. long.

2223. Stictis (Eustictis) nivea. *Pers.* "Snowy Stictis."

Elliptic, very thin, white.—*Pers. M.E.* p. ii. 339. *Fr. S.M.* ii. p. 196. *Berk. Ann. N.H.* no. 167. *Desm. exs.* no. 763.

On *Pinus pinaster*. Milton, Norths.

2224. Stictis (Eustictis) lichenicola. *Mont.* "Lichen Stictis."

Erumpent, between fleshy and waxy, cupulæform; disc grey-black, nearly plane; margin obtuse, blackish, cinereous, cracking in a stellate manner; asci cylindrical; sporidia obovate or elliptical, with many nuclei, then septate, or fenestrate.—*Mont. Ann. Sc. Nat.* v. p. 281, t. 13, f. 3. *Berk. Ann. N.H.* no. 166.

On foliaceous *Cænomyces*. Wareham. Isle of Skye.

"I am not at all sure that it is a true fungus. Its sporidia, as Montagne remarks, and my own observations confirm the fact, are exactly like those of *Urceolaria scruposa*."—*M.J.B.*

2225. Stictis (Eustictis) hysterioides. *Desm.* "Sedge Stictis."

Immersed, closed, hystericiform, then erumpent, prominent, open, ovate-oblong, or suborbicular; border brown-black, subgranulate; hymenium waxy, tawny, or rufous; asci cylindrical; sporidia oblong, obtuse, straight, hyaline, with four nuclei.—*Desm. Ann. Sc. Nat.* xix. (1843), p. 365. *B. & Br. Ann. N.H.* no. 314. *Berk. exs.* no. 308. *Propolis hysterioides*, *Fckl. Sym. Myc.* p. 255.

On *Carices*.

2226. Stictis (Eustictis) chrysophæa. *Fr.* "Golden-yellow Stictis."

Erumpent, orbicular; disc concave, reddish; border rather thickened, golden yellow; asci clavate; sporidia fusiform.—*Fr. S.M.* ii. p. 194. *B. & Br. Ann. N.H.* no. 966, t. 16, f. 19. *Pers. Ic. P. t.* 8, f. 1, 2.

On dead wych-elm. Batheaston.

Sporidia fusiform (0.05 in.) 127 m.m. long.

2227. Stictis lecanora. *Schm.* "Willow Stictis."

Erumpent, fleshy, tremellose, patellæform, tawny; margin somewhat lacerated, sprinkled with a whitish meal.—*Schm. & Kze. exs.* no. 174. *B. & Br. Ann. N.H.* (1866), no. 1172. *Fr. S.M.* ii. p. 195.

On dead willow twigs. Jedburgh.

2228. Stictis (Xylographa) parallela. Fr. "Parallel Stictis."

Erumpent, striaeform, at first closed, then open; disc reddish-brown, obliterating the margin, black when dry; sporidia ovate-clavate; hyaline, simple.—Fr. *S.M.* ii. p. 197. *Eng. Fl.* v. p. 213. *Xylographa parallela*, Fckl. *Sym. Myc.* p. 252.

On dead fir wood.

[Low. Carolina.]

The habit is very much that of a *Hysterium*.

2229. Stictis (Xylographa) longa. Fr. "Long Stictis."

Scattered, immersed, surrounded by the prominent wood, very long, attenuated at either end, open throughout its length.—Fr. *Ind. Alph.* p. 105. *Eng. Fl.* v. p. 213.

On wood.

Very long, about $1\frac{1}{2}$ line, black, livid within, half immersed in the wood, sometimes 2 or 3 specimens are confluent.—Pers.

Dr. Capron has found at Shere a *Stictis* allied to *S. parallela* and this species, with the habit of the former; the paraphyses are branched above, and the sporidia are long-elliptic, straight or curved, triseptate, '0005-'0006 in. long.

2230. Stictis (Propolis) versicolor. Fr. "Many-coloured Stictis."

Immersed, sub-oblong, plane; margin spurious, laciniated; disc at length farinaceous; asci large; sporidia rather large, oblong, with two or more nuclei; paraphyses few, slender.—Fr. *S.M.* ii. p. 198. *Rav. exs.* ii. no. 53. *Fr. exs.* no. 276. *Fckl. exs.* no. 1109. *Cryptomyces versicolor*, *Eng. Fl.* v. p. 214.

var. a. **alba.** Disc white, at length blackish.—A. & S. t. 9, f. 7.

var. c. **viridis.** Disc verdigris-green, pulveraceous.—Fr. *S.M.* ii. p. 198.

On pales, sticks, &c.

[United States.]

The hymenium resembles a small portion of a transverse slice of a cocoonut, which has been exposed for a short time to the air.—M.J.B.

2231. Stictis (Propolis) phacidioides. Fr. "Arbutus-leaf Stictis."

Hypophyllous, erumpent, breaking up the epidermis into five equal, acute teeth; disc convex, milk-white, pruinose.—Fr. *S.M.* ii. p. 198. *Berk. Ann. N.H.* no. 162.

On dead leaves of *Arbutus uva ursi*. Lubcroy. Sutherlandshire.

STICTIS WAUCHII. Berk. *Outl.* p. 375. *Cryptomyces Wauchii*, Grev. t. 206. *Eng. Fl.* v. p. 214, is referred by Tulasne to *Rhytisma maximum*.

Gen. 308.

ASCOMYCES, M. & D.



Fig. 342.

Parasitic; receptacle none; asci forming a thin pulverulent stratum, mixed with moniliform threads.—Berk. *Outl.* p. 376.

This appears to be the lowest form under which *Discomyces* can appear, the way being made for it by *Propolis*. In outward aspect it has little resemblance to more typical genera.—M.J.B. (Fig. 342.)

2232. *Ascomyces bullatus*. Berk. “Blister Ascomyces.”

Tufts punctiform, at length confluent, at first covered by the epidermis; sporidia ovate or elliptic, subgelatinous, hyaline.—Berk. *Outl.* p. 376, t. 1, fig. 9, *C. Oidium bullatum*, B. *Journ. Hort. Soc.* ix. p. 51, with fig. *Taphrina bullata*, Tul. *Ann. Sc. Nat. ser.* v. vol. v. p. 127.

On living pear leaves.

(Fig. 342.)

Sporidia $\frac{1}{2500}$ in. long; asci .015-.025 m.m. long, .01 m.m. thick.

2233. *Ascomyces deformans*. Berk. “Peach Ascomyces.”

Hypophyllous, rendering the matrix here and there bullate, sprinkled with a white powder; asci short, cylindrical; sporidia elliptical, hyaline.—Berk. *Outl.* p. 376, t. i. f. 9 a. b. *Taphrina deformans*, Tul. *Ann. Sc. Nat. ser.* v. vol. v. p. 128. *Exoascus deformans*, Fckl. *Sym. Myc.* p. 252. Fckl. *exs.* no. 2063 and 2275.

On peach leaves.

2234. *Ascomyces trientalis*. Berk. “Trientale Ascomyces.”

Spots orbicular or irregular, arising from a reddish stratum.—Berk. *in litt.* Berk. *Out.* p. 376.

On leaves of *Trientalis Europæa*.

2235. *Ascomyces juglandis*. Berk. “Walnut Ascomyces.”

Hypophyllous, effused, snow-white on the nerves of the leaves; sporidia ovoid, hyaline.—Berk. *Outl.* p. 376. *Gymnosporium leucosporum*, Mont. *Syll.* p. 309.

On walnut leaves.

Order XXIX. TUBERACEI.

Subterranean. Hymenium waved and sinuate, often intricate and closely packed.

This differs from the Order vii. *Hypogæi*, in that the sporidia are contained in asci.

Sporidia more or less elliptic—

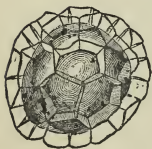
Peridium rough. Asci saccate	<i>Tuber.</i>
Peridium warty. Hymenium lacunose	<i>Balsamia.</i>
Peridium warty, opening above. Asci cylindrical	<i>Genea.</i>

Sporidia globose—

Integument smooth. Asci clavate	<i>Choiromyces.</i>
Integument warty, opening above. Asci clavate	<i>Pachyphlaeus.</i>
Integument papillose. Asci oblong	<i>Hydnotrya.</i>
Integument cottony. Asci cylindrical	<i>Stephensia.</i>
Integument downy. Asci elliptic	<i>Hydnobolites.</i>
Hymenium exposed. Asci linear	<i>Sphærosoma.</i>
Sporidia globose, with radiating threads, starchy—	
Peridium convolute. Asci saccate	<i>Amylocarpus.</i>
Sporidia concentric, at length dusty—	
Integument hard. Asci nearly globose	<i>Elaphomyces.</i>

Gen. 309.

TUBER, Mich.



Figs. 343.

Asci short, saccate, disposed in sinuous veins ; sporidia elliptic, reticulate, often echinulate ; peridium warty or tubercled, rarely smooth, without any definite base.—*Myc. p.* 221. *Tul. Hyp. p.* 133. *Vitt. Tub. p.* 131. *Berk. Outl. p.* 376. (*Figs.* 343, 344 sporidia.)

Sect. A.—Epispora alveolate.

2236. Tuber aestivum. Vitt. “Common Truffle.”

Rounded, irregular, large, 1-2 inches or more in diameter, black-brown, verrucose ; warts large, polygonal, pyramidal, and transversely striate ; veins very numerous, indistinct ; flesh whitish, then clay coloured, or pale brown ; asci 4-6 spored ; spores elliptic, brown, reticulato-alveolate ; alveoli few and broad.—*Vitt. Tub. p.* 38, *t.* 2, *f.* 4. *Tul. Hyp. t.* 7, *f.* 3. *Corda Icon. vi. t.* 18, *f.*

129. *Berk. Outl.* p. 376, t. 23, f. 2. *Cooke's B.F.t.* 23, f. 1. *Tuber cibarium*, *Sow. t.* 309. *Hussey. t.* 11. *Eng. Fl. v.* p. 228. *T. bohemicum*, *Corda. Ic. vi.* *T. albidum*, *Fr. Sys. Myc.*

In woods, especially of beech. Esculent.

From 1 to 3 inches in diameter, irregularly globose. The warts on the surface of the peridium large, four to six-sided, longitudinally and irregularly sulcate, the apex pierced or excavated and traversed chiefly about the crown with shallow parallel striæ. Sporidia ellipsoid, '0256-'032 m.m. long, '0224-'025 m.m. broad, pallid tawny-yellow; epispore faveolo-plicate.

2237. *Tuber macrosporum.* Vitt. "Large-spored Truffle."

Roundish; peridium clad with minute, irregular tubercles, covered with ferruginous spots and fissures; flesh compact; veins scattered, numerous and interrupted, and mixed with obscure lines; asci with long pedicels, 1-3 spored; sporidia elliptic, very large, brown; epispore alveolo-reticulate, reticulations small.—*Vitt. Tub. t. i. f.* 5. *Tul. Hyp. t.* 17, f. 8. *B. & Br. Ann. Nat. Hist. no.* 580. *Berk. Outl. p.* 376.

In woods. Near Bristol.

From the size of a filbert to that of a walnut, or larger, ferruginous black; flesh at first white, compact, veins dirty-white then pale-brown. Spores visible to the naked eye, '055-'065 m.m. long, '032-'039 m.m. broad. Odour strongly alliaceous.

2238. *Tuber bituminatum.* B. & Br. "Pitchy Truffle."

Black, globose, or ovate, regular; warts small and polyhedral, with a deep hole excavated at the base of the tuber; veins loosely coherent, for the most part originating from the margin of the basal hollow; asci oval, with long pedicels; sporidia brown, ovate, loosely cellulose.—*B. & Br. Ann. N.H. no.* 581. *Berk. Outl. p.* 376.

In deep sand. Oct. Bowood. Wilts.

"Closely allied to *T. aestivum*, Vitt. but easily distinguished by the odour; it differs also in the general form, being much more regular, and the warts smaller, and in the existence of a basal cavity prolonged into the substance of the fungus, which is thus very light compared with *T. aestivum*. The veins cohere very loosely, so that it is difficult to cut the plant in half without breaking it into frustules. It shrinks very much in drying. The sporangia have much longer stalks than in *T. aestivum*. The sporidia closely resemble those of that species, but are slightly longer compared with their width, and have somewhat shallower cells. It ranges from the size of a walnut to that of a hen's egg." Odour bituminous, and very strong of horse radish.—*M.J.B.*

2239. Tuber scleroneuron. *B. & Br.* "Hard Truffle."

Red-brown, cartilaginous, globose, lobate, minutely warted, or nearly smooth, rimose; veins irregular, broken, springing from the cracks in the peridium; cinereous towards the centre, red-brown at the circumference; sporidia red-brown, ovate, minutely cellulose; odour faintly aromatic.—*B. & Br. Ann. N.H. no. 582. Berk. Outl. p. 376.*

In the ground. Oct. Bowood.

"This species differs from *T. rufum*, *Vitt.* in its firmer cartilaginous texture, deep red-brown colour, in the form of its sporidia, which are ovate, not elliptic-elongate, and in its faint aromatic odour. The venation also is more broken and interrupted. *Tuber rufum*, *Vitt.* appears to be its nearest ally. When dried, *T. scleroneuron* becomes as hard as a piece of wood."

2240. Tuber excavatum. *Vitt.* "Hollowed Truffle."

Subglobose, about an inch in diameter; peridium discrete, ochraceous, minutely verrucose, firm; flesh horny, cinereous-red, liver-coloured, or tawny; veins pallid-ochraceous; the substance falls away in the centre, so as to leave a cavity, which has an opening at the base of the tuber; asci numerous, ellipsoid, 2-4 spored; sporidia ellipsoid, yellowish, or pallid-tawny; epispore largely faveolo-plicate.—*Vitt. Tub. t. 1, f. 7. Tul. Hyp. t. 6, f. 1, t. 17, f. 5. Smith Seem. Journ. Bot. iii. p. 11, t. 30, f. 1-6. Tuber fuscum, Corda. Icon. i. t. 7, f. 298. Vittadinion Montagnei, Zobel in Corda. Ic. vi. t. 20, f. 142.*

In woods. Rudloe, Batheaston, Leigh Wood, and Somersetshire.

Spores '023-'026 m.m. broad, '032-'042 long.

Sect. B.—Epispore echinulate.

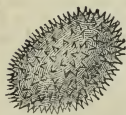
2241. Tuber brumale. *Mich.* "Winter Truffle."

Fig. 344.

Tubers more or less regularly globose, black, rough with polygonal warts, at length smooth and naked; the mature flesh blackish-grey, marbled with white veins; asci numerous, with 4-6 spores; sporidia oblong-elliptic and echinulate, with rigid spines.—*Vitt. Tub. t. 1, f. 6. Tul. Hyp. t. 7, f. 2, t. 17, f.*

3. B. & Br. Ann. N.H. xviii. p. 80. Berk. Outl. 376. Tuber brumale pulpa obscura odora, Mich. p. 221, t. 102. T. melanosporum, Berk. Ann. N.H. no. 320.

On the ground. Oct.—Jan. Esculent.

When fresh the warts are of a bright brown showing in the interstices the pale tint of the inner substance; in drying the brown tint is entirely lost. Sporidia small, elliptic, ciliated, but not reticulated. Veins very broad, with narrow interstices. Spores '026-'032 m.m. long, '019-'023 m.m. broad. Smell at length rather disagreeable. (*Fig. 344, sporidium.*)

2242. *Tuber rufum.* *Pico.* "Red Truffle."

Subglobose, or irregular, from a quarter of an inch to an inch in diameter; peridium thick, subcartilaginous, rimose, minutely verrucose, tawny ferruginous; flesh at first soft and whitish, at length reddish and firm, or horny; veins from whitish becoming livid, mixed with others that are tawny; asci obversely egg-shaped, 1-4 spored (generally 3); sporidia ellipsoid, tawny, studded with sharp points.—*Pico, p. 80. Vitt. Tub. t. 1, f. 1. Tul. Hyp. t. 6, f. 2, t. 18, f. 2. B. & Br. Ann. N.H. no. 322. Berk. Outl. p. 376. Tuber cinereum, Tul. Giorn. Bot. Ital. ii. p. 62. Oogaster rufus, Corda, Icon. vi. t. 16, f. 123.*

In woods. Rudloe, Wilts. Audley End, Essex.

The odour is said by Vittadini to be strong and nauseous. Variable in the colour of the peridium.

Spores '029-'032 m.m. long, '019-'024 m.m. broad.

2243. *Tuber nitidum.* *Vitt.* "Shining Truffle."

Globose or depressed; peridium thick, hard, smooth, shining, and pallid; flesh at first whitish, at length reddish-brown, hard; veins whitish, rather numerous, principally diverging from a whitish spot at the base; asci egg-shaped, containing from 1-4 spores; sporidia ellipsoid, reddish-yellow, densely echinulate; odour, when recent, nauseous.—*B. & Br. Ann. N.H. no. 321. Vitt. Tub. t. 2, f. 10. Berk. Outl. p. 376. Berk. exs. no. 303. Tul. Hyp. p. 142. Oogaster nitidus, Corda, Icon. vi. t. 15, f. 117.*

In the ground. Hanham. Rudloe. Spye Park.

In the young plant the asci are precisely of the form of those in *Cheiriomyces meandriformis*, but with age they enlarge, and are at last obovate, as in *T. aestivum*. Distinguished from *T. rufum* by its smooth, pale peridium, and the veins springing from a distinct, generally single, basal point.

Spores '026-'030 m.m. long, '016-'023 m.m. broad.

2244. *Tuber puberulum.* *B. & Br.* "Downy Truffle."

Gregarious, irregularly sublobate, clothed with short, erect down, which gives it to the naked eye a peculiar pearly appearance; the white spots are very visible, even in dried specimens; peridium very thin and delicate, so that the pinky-brown colour

of the flesh is apparent through it, often cracked; veins white from a radiating base, in some individuals very few; sporidia nearly spherical, reticulato-echinulate; odour of the radish.—*B. & Br. Ann. N.H. Aug. 1846. Berk. Outl. p. 376.*

In sandy ground. Hanham, near Bristol, Chudleigh, Aspley, &c.

2245. *Tuber dryophilum.* Tul. "Wood Truffle."

Gregarious, with little odour, rounded, usually about the size of a nutmeg, nearly smooth, white, marked here and there with darker patches; the peridium is thick, hard, and tough, easily parting from the flesh, which is firm, reddish-brown, with white interstices, which are given off from different points of the surface; sporidia elliptic and coarsely reticulato-echinulate.—*Tul. Hyp. t. 5, f. 3, t. 19, f. 8. B. & Br. Ann. Nat. Hist. Aug. 1846. Berk. Outl. p. 376.*

In woods. Aug.—Oct. King's Cliffe, Chudleigh, Bristol, &c.

Spores '023 m.m. long, '016 m.m. broad, others '038-'045 m.m. long, '032-'035 m.m. broad.

Gen. 310.

CHOIROMYCES, Vitt.



Fig. 345.

Common integument even; base definite; asci clavate; sporidia spherical.—*Vitt. Tub. p. 50. Tul. Hyp. p. 170. Berk. Outl. p. 377. (Fig. 345.)*

2246. *Choiromyces meandriformis.* Vitt. "Veined Choiromyces."

Variable, globoso-mammose, even, pale chestnut colour; fissures broad, whitish brown, tessellated; base plicate, rugose; flesh white, when dry yellowish; veins numerous, meandering, ochraceous.—*Vitt. Tub. t. 2, f. 1, t. H, f. 10. Tul. Hyp. t. 19, f. 7. Corda. Ic. vi. t. 13, f. 110. B. & Br. Ann. N.H. xviii. p. 80. Tuber album, Sow. t. 310. Bull. t. 404?*

In the ground. Highgate, 1860.

Sometimes of considerable size; the specimen found at Highgate was not less than 4 inches in diameter, and certainly had a very strong odour. Sporidia spherical, echinulate, '019-'022 m.m. diameter. (*Fig. 345 sporidium.*)

Gen. 311.

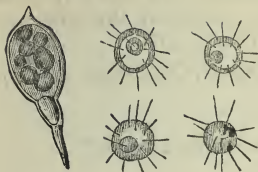
AMYLOCARPUS, Curr.

Fig. 346.

Common integument thick, convolute; asci soon absorbed, saccate; sporidia globose, clothed with radiating threads, amylaceous.—*Berk Outl. p. 377.* (Fig. 346.)

2247. Amylocarpus encephaloides. Curr. "Currey's Amylocarpus."

Small, globose, somewhat flattened, dull yellow, surface minutely convolute; asci broadly clavate; sporidia spherical, colourless, with long delicate sharp rays projecting in all directions.—*Curr. Proc. Roy. Soc. (1857), p. 119, with figs.*

Growing gregariously on fragments of wood, on the sands by the sea shore at Sketty, near Swansea.

Each individual presents the appearance of a small round somewhat flattened body, of a dull yellow colour, and with an unevenness of surface caused by numberless convolutions of the integument. The diameter of the largest did not much exceed $\frac{1}{16}$ th in. Externally with a strong resemblance to *Dacrymyces deliquescens*. The integument is of considerable thickness formed of several layers of cells, the outer large and rounded, the inner long and flat. The asci are broadly clavate, with a very short stem springing from threads proceeding from the inner surface of the integument. They are absorbed at an early period, and the sporidia form a dense mass. Sporidia globular, colourless, furnished with long delicate sharp rays, projecting from the surface in every direction. Each sporidium with an internal nucleus, or oil drop. Spores $\frac{1}{2000}$ th in. diameter.

(Fig. 346.)

Gen. 312.

PACHYPHLEUS, Tul.

Fig. 347.

Common integument warty, opening by a terminal aperture; base distinct; asci clavate; sporidia spherical.—*Tul. Hyp. p. 130. Berk Outl. p. 377.* (Fig. 347.)

2248. Pachyphleus melanoxanthus. Tul. "Black Pachyphleus."

Globose, angular, verrucose—with a distinct absorbing base—black, internally olivaceous yellow, marbled with obscure lines,

and broad black veins.—*Tul. Hyp. t. 4, f. 6, t. 14, f. 4. Choironmyces melanoxanthus, Berk. Ann. N.H. xiii. p. 359.*

In oak or beech woods, often attached laterally to sticks, leaves, &c., without any connection with the ground. Oct. Bowood Park, Bristol, King's Cliffe, and Devonshire.

About the size of a horse bean, globose, but more or less compressed and angular, furnished with a distinct absorbent base; externally black, clothed with obtuse but not rigid warts, which are less manifest when the plant is dry. Flesh of a dirty olive yellow with broad black veins, which consist of a loose slightly branched tissue arising from hexagonal cells, the ends of the threads of which become oblong-elliptic, distinct, pedicellate asci, containing 8 dark, globose, echinulate, but not reticulate sporidia. Smell in some specimens like that of some agaric, in others strong and nauseous. The peridium is black in every stage of growth.—*M. J. B.* Spores '013-'016 m.m. diameter.
(*Fig. 347 sect. and sporidium.*)

2249. *Pachyphlœus citrinus.* B. & Br. "Lemon Pachyphlœus."

Subglobose, minutely warted, peridium brown, powdered with lemon-coloured particles; apex bright lemon-yellow, internally yellowish; interstices floccose, lemon-yellow, base rooting.—*B. & Br. Ann. N.H. xviii. p. 79. Tul. Hyp. 132.*

In woods. Near Bristol and in Wiltshire and Devonshire.

Very nearly allied to *P. melanoxanthus*, which is, however, black in every stage of growth, and has but little odour, whereas this is densely powdered with lemon coloured particles, and has a strong smell, like that of rotting sea weed. The orifice is generally more expanded, and is of a fine deep lemon yellow from the exposure of the interstices of the fructifying veins, and the peridium thin and brown frosted with yellow, when young of a uniform gamboge yellow. In *P. melanoxanthus* the veins are nearly black, with yellowish interstices, and the peridium thick, far more coarsely warted, more compressed, and irregular in form and always black.—*M. J. B.*

2250. *Pachyphlœus conglomeratus.* B. & Br. "Conglomerate Pachyphlœus."

Irregularly lobed and plicate, conglomerate, even; peridium rufous-brown, interstices of the lobes clothed with adpressed silky, yellow fibres.—*B. & Br. Ann. N.H. xviii. p. 80. Tul. Hyp. p. 132.*

In woods. Oct. Near Bristol.

About an inch in diamer, shortly stipitate, much lobed, and plicate as if made up of a number of individuals, the lobes rounded, of a deep brown-olive. Sometimes quite even, sometimes rather rough, but not the least verrucose, interstices of the lobes clothed with adpressed silky, yellow fibres. Asci clavate, irregular, containing eight globose, tuberculate sporidia. Sporidia larger than in the other species ('0192 m.m.), and differing in their appearance.—*M. J. B.*

Gen. 313.

STEPHENSIA, Tul.

Fig. 348.



Common integument fleshy, cottony; base distinct; hymenium intricate; asci cylindrical; sporidia globose.—*Tul. Hyp. p.* 129. *Berk. Outl. p.* 377. (*Fig. 348.*)

2251.

Stephensia bombycina.
Stephensia."*Tul.* "Strong-scented

Subglobose, depressed; peridium rather soft, floccose, irregularly intruded into the cavity, destitute of rooting fibres; flesh gyroso-venose; sporidia pellucid, spherical.—*Tul. Hyp. t.* 12, *f.* 4. *Genea bombycina*, *Vitt. Tub. t.* 3, *f.* 13, *t.* 4, *f.* 8. *B. & Br. Ann. N.H.* xiii. *p.* 357.

Oct. Castle Combe, Chudleigh.

Peridium floccose, rather soft, dirty white, and so much intruded as sometimes to leave no cavity. The sporidia are globose, at first smooth, at length verrucose. With age they lose their transparency. The smell is very strong and disagreeable, resembling that of *Melanogaster ambiguus*. A small slice of it placed in a drop of water on the field of the microscope produced when dry a quantity of fine radiating crystals. Spores .019-.022 m.m. diameter.—*M. J. B.* (*Fig. 348 sect. and sporidium.*)

Gen. 314.

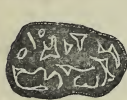
HYDNOTRYA, B. & Br.

Fig. 349.

Common integument minutely papillose, not distinct; hymenium complicated with gyroso lacunæ, leading to the surface; asci oblong; sporidia globose, tuberculate.—*B. & Br. Ann. N.H.* xviii. *p.* 78. *Tul. Hyp. p.* 127. (*Fig. 349.*)

2252. **Hydnotrya Tulasnii.** *B. & Br.* "Tulasne's Hydnotrya."

Globose-depressed, base plicate, cribroso-porose, velvety rufous; cells large, walls pubescent, white; trama rufous; asci long; sporidia globose, at length reticulated, not echinulate.—*B. & Br. Ann. N.H.* xviii. *p.* 78. *Tul. Hyp. t.* 8, *f.* 2, *t.* 14, *f.* 3, *t.* 21. *Hydnobolites Tulasnei*, *Berk. Ann. N.H.* xiii. *p.* 357, no. 317. *Berk. exs.* no. 302.

In sandy ground. Aug. Spye Park, Wilts, and Chudleigh. Esculent.

Depresso-globose 1-2 in. or more in diameter, ferruginous with a tinge of vermillion, velvety, cribroso-porous at the base; cells irregular, large, especially in mature individuals, pubescent; substance rufous; asci oblong-elliptic, containing eight globose spores, reticulated but not echinulate; in the centre of each reticulation there is a single globule. Closely resembling *Balsamia vulgaris* when dry.—*M.J.B.* Spores .035 m.m. diameter.

(Fig. 349 sect. and sporidium.)

Gen. 315.

HYDNOBOLITES, Tul.

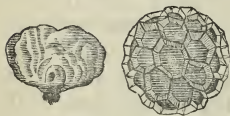


Fig. 350.

Integument replaced by white, evanescent down; hymenium complicated with sinuose lacunæ, ending at the surface; asci elliptic; sporidia globose.—*Tul. Hyp. p.* 126. *Berk. Outl. p.* 377.

(Fig. 350.)

2253. Hydnobolites cerebriformis. Tul. "Brain-like Hydnobolites."

The size of a filbert, firm, even, smooth, pallid yellow; asci elliptic; sporidia globose.—*Tul. Ann. Sc. Nat.* xix, p. 378. *Tul. Hyp. p.* 126, t. 4, f. 5, t. 14, f. 2. *B. & Br. Ann. N.H.* xviii. p. 8, no. 10. *Oogaster, Corda. Ic.* vi. t. 16, f. 121.

In woods. Aug. Sept. Bristol and Wilts.

A small species, resembling a small lacunose truffle, but differs in having no real peridium, as is the case also in *Hydnotria*. Sporidia 0.192-0.224 m.m. (Fig. 350 sect. and sporidium.)

Gen. 316.

SPHÆROSOMA, Kl.



Fig. 351.

Common integument altogether wanting; hymenium exposed, even or rugose, solid or lacunose; asci linear; sporidia spherical.—*Tul. Hyp. p.* 184. *Berk. Outl. p.* 377.

(Fig. 351.)

2254. Sphærosoma ostiolatum. Tul. "Pierced Sphærosoma."

Globose, gibberoso-sinuate, ostiola apical, pervious, and more or less excavated, smooth, rather soft, brown; spores dark brown, tuberculate.—*Tul. Hyp. t.* 19, f. 1. *B. & Br. Ann. N.H.* xviii. p. 79.

Under leaves amongst loose mould. Near Bristol.

There is not the least trace of peridium in any stage of growth. A very curious circumstance sometimes occurs—that there is more than one stratum of hymenium. The asci are much shorter than the paraphyses. The adult plant is strongly plicate, and of a rich mulberry brown. Sporidia perfectly spherical, $\cdot 019\text{--}\cdot 023$ m.m. diameter, with thick, elongated, obtuse unequal warts. (Fig. 351.)

Gen. 317.

BALSAMIA, Vitt.



Fig. 352.

Common integument warty; hymenium complicated with distinct lacunæ not leading to the surface; sporidia cylindrical, or oblongo-elliptic, even, pellucid.—*Vitt. Tub. p. 30. Tul. Hyp. p. 122. Berk. Ann. N.H. xiii. p. 358. Berk. Outl. p. 377.* (Fig. 352.)

2255.

Balsamia platispora. *B. & Br.*

“Broad-spored
Balsamia.”

Small, globose, rufous, minutely warted, substance pallid yellow, minutely cellulose; sporidia at first broadly oblong-elliptic, with a large globose nucleus, at length slightly elongated trinucleate.—*B. & Br. Ann. Nat. Hist. xiii. p. 358, no. 318. Tul. Hyp. t. 15, f. 2.*

Oct.—Dec. Rudloe, Wilts.

About the size of a horse bean, rufous, with the interstices of the minute warts of a light yellow tint, from the exposure of the internal substance; cells minute; sporidia at first broadly oblong-elliptic with a large globose nucleus and a number of minute granules; in one specimen the sporidia were slightly elongated, with one large and two small nuclei. Smell strong. Sporidia $\cdot 0217$ m.m. long, $\cdot 0129$ m.m. broad. (Fig. 352.)

Gen. 318.

GENEA, Vitt.

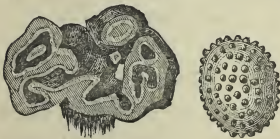


Fig. 353.

Common integument warty, with an aperture at the apex; hymenium waved and sinuated, but not forming an intricate mass; asci cylindrical; sporidia subglobose, or elliptical.—*Vitt. Tub. p. 27. Tul. Hyp. p. 118. Berk. Ann. N.H. xiii. p. 356. Berk. Outl. p. 377.* (Fig. 353.)

2256. *Genea verrucosa*. Vitt. "Warted *Genea*."

Very irregular and polymorphous, gibbous, sulcate, or also somewhat many-lobed, black, verrucose ostiolate; ostiola sometimes very broad, radical filaments abbreviated; sporidia broadly elliptic, verrucose.—*Tul. Hyp. t. 4, f. 1, t. 12, f. 3. t. 13, f. 5. Vitt. Tub. t. ii. f. 7. B. & Br. Ann. N.H. xviii. p. 78. G. papillosa, B. Ann. N.H. xiii. p. 356.*

In clayey soil. Bowood Park and King's Cliffe.

Variable in size from a pea to a small nut, globose, very irregular, often many-lobed, with the lobes rounded, externally black and verrucose, cinereous or dirty white within; sporangia linear-elongated, very obtuse; sporidia broadly elliptic, '0256 m.m. broad, '032 m.m. long, verrucose and whitish, warts very obtuse and unequal, nucleus oily. (Fig. 353.)

2257. *Genea Klotschii*. B. & Br. "Klotsch's *Genea*."

Fœtid, peridium subplicate, black without and within, verrucose, affixed below to rather rigid, brown, rooting fibrils; mycelium effuse, white, arachnoid and woven; sporidia large, tuberculate.—*B. & Br. Ann. N.H. xviii. p. 78. Berk. Outl. p. 378. Corda. Ic. vi. t. 11, f. 101. Tul. Hyp. t. 13, f. 4.*

On the soil. Bristol and Devonshire.

The mycelium spreads for some distance on or within the soil, so that the plant is easily detected when the leaves are raked off. This vanishes when the peridia are perfect. One or more individuals are found in each patch of mycelium. In the young peridium the point of attachment is lateral. The sporidia are large, coarsely granulated, and much exceeding in volume those of *G. verrucosa*.—*M. J. B. Sporidia '04-'05 m.m. diameter.*

2258. *Genea hispidula*. Berk. "Hairy *Genea*."

Small, brown, externally invested everywhere with rather rigid, adpressed, brown flocci; interior cavity very often simple, with the mouth almost hidden; radical fibres brown, adhering to the base; sporidia large, ellipsoid; warts thick and crowded.—*G. papillosa, Berk. Ann. N.H. xviii. p. 76. Berk. Outl. p. 378.*

In the ground. Near Chudleigh, Aspley, Beds., and Bristol.

The whole peridium is of a rich brown, and is densely clothed with brown bristles wherever it extends. The sporidia are very much larger and far more coarsely granulated than in *G. verrucosa*, the granules, indeed, being often bifid; they often contain two nuclei, but sometimes there is but one. From the size of a pea to that of a filbert. Sporidia '032 m.m. broad, '038-'042 m.m. long; odour faint, not peculiar.

Gen. 319.

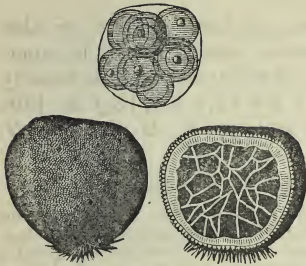
ELAPHOMYCES, Nees.

Fig. 354.

Common integument thick, hard; asci globose, or obovate; sporidia consisting of several concentric utricles; internal mass at length dusty.—*Tul. Hyp. p.* 100. *Berk. Eng. Fl. v. p.* 306. *Berk. Outl. p.* 378.

(Fig. 354.)

2259. Elaphomyces anthracinus. Vitt. "Smooth-coated Elaphomyces."

Globose, depressed in the centre, papillate, sometimes hollowed; mycelium dark brown; cortex black or brown, not spotted, nearly smooth, rigid, crustaceous; peridium thick, whitish; sporidia blackish-brown.—*Vitt. Tub. t.* 3, f. 8. *Tul. Hyp. t.* 19. *B. & Br. Ann. N.H.* xviii. p. 81.

In clayey soil. Near Bristol.

The original specimens of Vittadini are minutely granulated under a lens, a character which does not appear in our specimen. The sporidia are alike, and at once distinguish it from *E. variegatus*, the only species with which it can be confounded. The smell is very powerful, in which respect again it does not agree with Vittadini's species. It is, indeed, probable that it will prove new, but on the authority of a single individual, not in very good condition, it would be rash to do more than indicate its nearest affinity. The outer rind in the specimen when gathered was black, the inner of a dull yellowish-white.—*M.J.B.*

2260. Elaphomyces variegatus. Vitt. "Rough-coated Elaphomyces."

Mycelium yellow (or yellowish-grey), inconspicuous; cortex thick, hard, ochraceous-yellow or golden-yellow, rough, with thick pyramidal and obtuse, or narrow, pointed, and fragile warts, or only granulated; peridium reddish-brown and variegated; asci 2-4 spored; sporidia opaque, blackish-brown.—*Vitt. Tub. t.* 4, f. 4. *Sturm.* iii. 19-20, t. 9. *E. muricatus. Eng. Fl. v. p.* 307. *Corda. Ic. vi. t.* 10, f. 97. *Berk. exs. no.* 306.

In mountain woods, &c.

Differing from *E. granulatus* in its more muncated surface, less deep black, and smaller sporidia, but essentially in the substance of the coriaceous covering, being variegated with brown dots. Sporidia .02-.022 m.m. diameter.

2261. Elaphomyces granulatus. Fr. "Granulated Elaphomyces."

Mycelium yellowish, soon vanishing; cortex yellow, at length tawny and brown, minutely papillate; papillæ adpressed, obtuse, or punctiform; peridium fragile, whitish, or reddish, when dry white; asci 1-8 spored; sporidia thick, rufous, or blackish purple.—*Fr. S.M.* iii. p. 58. *Vitt. Lycop.* t. 3, f. 7. *Tul. Hyp.* t. 19, f. 4. *Berk. exs.* no. 279. *Ann. Sc. Nat.* xvi. t. i. f. 3, t. 2, f. 7, t. 4, f. 3. *Sturm.* iii. 19-20, t. 8. *Eng. Fl.* v. p. 306. *Nees.* f. 147. *Berk. Ann. N.H.* no. 211, t. 11, f. 10.

In dry heathy ground.

[Low. Carolina.]

The central substance when young is tender and juicy, and consists of filaments spotted with fertile patches. The filaments of the interstices are loose, and but little complicated, whereas those of the fructifying spots are more closely packed, short, and branched, their tips swelling, and gradually giving rise to large globose utricles, containing the sporidia. Sporidia .025-.03 m.m. diameter. (Fig. 354.)

Order XXX. PHACIDIACEI.

Receptacle more or less coriaceous or carbonaceous; disc at length exposed by the regular or irregular fissure of the outer coat.—*Berk. Outl.* p. 379. *Intr.* p. 283.

The perithecia are elongated, sometimes branched, or, when circular, rather orbicular than spherical. In the linear species the form of the aperture depends upon the form of the perithecium, or excipulum, the margins of which are rounded. In other cases the disc is exposed by the mere fissure of the walls, as in *Phacidium*, and this fissure may either be simple or compound, radiating from a central point, and forming triangular lobes.—*Berk. Intr.* p. 283.

Perithecia bursting with valvular teeth . . .	<i>Phacidium.</i>
Perithecia globoso-depressed, at length open . . .	<i>Heterosphaeria.</i>
Perithecia confluent, opening by flexuous fissures . . .	<i>Rhytisma.</i>
Perithecia labiate, splitting from the centre . . .	<i>Triblidium.</i>
Perithecia labiate, opening longitudinally . . .	<i>Hysterium.</i>
Perithecia horny, sporidia united at the base . . .	<i>Sporomega.</i>
Perithecia flexuose, lips divergent . . .	<i>Colpoma.</i>
Perithecia linear, simple or branched, asci sac- ciform	<i>Ailographum.</i>
Perithecia stellate	<i>Actidium.</i>
Perithecia stipitate, wedge shaped . . .	<i>Lophium.</i>
Perithecia orbicular, with a deciduous operculum . . .	<i>Stegia.</i>
Disc innate, erumpent	<i>Trochila.</i>

Gen. 320.

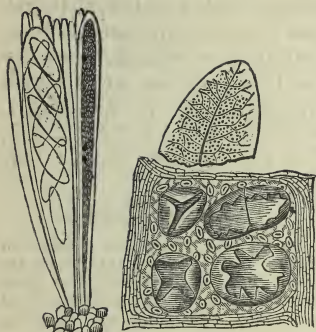
PHACIDIUM, Fr.

Fig. 355.

Perithecium bursting irregularly in the centre, by valvular teeth.—*Berk. Outl. p. 379.*

(Fig. 355.)

2262. Phacidium pini.

Schm. "Scotch-fir Phacidium."

Erumpent, subrotund, truncato-disciform, black; perithecia with the laciniae obtuse; disc dingy; sporidia colourless, very long, multiseptate, often with a filiform termination.—

Fr. S.M. ii. p. 572. A. & S. t. 5, f. 8. Linn. Trans. xxiv. t. 25, f. 36. Nees. f. 399. Schm. M.H. i. t. 2, f. 11. Fries exs. no. 62. Eng. Fl. v. p. 292. Tul. Carp. iii. p. 136. Fckl. exs. no. 1095.

On bark of *Pinus sylvestris*.

Scattered, sub-innate, 1-2 lines broad, sometimes irregular, depressed, smooth, at first shining, then opaque, at length broken up; stratum under the disc softer, flesh white. "Sporidia colourless, very long, multiseptate, often tapering more at one end than the other, each extremity being extended into a filiform prolongation."

2263. Phacidium carbonaceum. Fr. "Black-powdered Phacidium."

Erumpent, subrotund, unequal, black, dehiscing into obtuse laciniae; disc dry, blackish.—*Fr. S.M. ii. p. 574. Fries. exs. no. 210. Eng. Fl. v. p. 292.*

On twigs of willows. Spring.

Gregarious, at first covered with the epidermis, subinnate, convex, black, rather shining; then depressed, opaque; laciniae unequal; disc black, as if powdered with charcoal.

2264. Phacidium vaccinii. Fr. "Bilberry Phacidium."

SPERMOGONIA.—Spermatia simple, cylindrical, straight, obtuse.

ASCOPHORE.—Erumpent, minute, convex, shining, rugose, splitting into four laciniae; disc sooty-black; sporidia lanceo-

late, straight, simple, hyaline.—*Fr. S.M.* ii. p. 575. *Eng. Fl.* v. p. 292. *Fries. exs.* no. 289. *Sph. arbuti*, *Sow. t.* 370, f. 6.

On leaves of *Vaccinium Vitis Idæa* (and *Arbutus Uva ursi*?)

2265. Phacidium coronatum. *Fr.* "Crowned Phacidium."

Innate, orbicular, hemispherical, depressed, blackish, splitting into many acute laciniae; disc yellowish; paraphyses curved at the tips; sporidia colourless, cylindrical, curved at the ends; about eight times as long as broad, with 6-8 nuclei.—*Fr. S.M.* ii. p. 577. *Batsch. f.* 152. *Fckl. exs.* no. 1096. *Sow. t.* 118. *Fl. Dan. t.* 1380. *Pers. Ic. Pict. t.* 10, f. 1. *Berk. exs.* no. 195. *Sturm. t.* 63. *Fries. exs.* no. 163. *Schm. exs.* no. 82. *Moug. exs.* no. 559. *Eng. Fl.* v. p. 292. *Bolt. t.* 109, f. 1. *Grev. t.* 52. *Linn. Trans.* xxiv. t. 25, f. 7. *Mag. Zool. & Bot.* no. 58, t. 15, f. 5. *Tul. Carp.* iii. p. 134.

On fallen leaves of oak, &c. Common. [Mid. Carolina.]

"Disc variable in colour, sometimes circumscribed with a black line." Sporidia .06-.08 m.m. (.0023-.003 in.) long.

2266. Phacidium dentatum. *Fr.* "Toothed Phacidium."

SPERMOGONIA.—Spermatia minute, cylindrical, curved.

ASCOPHORE.—Quadrangle, seated on pallid spots, black, splitting into 4 or 5 acute laciniae; disc dirty yellow; asci linear-oblong; sporidia filiform.—*Fr. S.M.* ii. p. 577. *Moug. exs.* no. 561. *Schm. exs.* no. 206. *Fckl. exs.* no. 1090. *Eng. Fl.* v. p. 292. *Corda.* iii. f. 81. *Ayres. exs.* no. 71. *Tul. Carp.* iii. p. 132. *Berk. exs.* no. 93.

On fallen oak leaves. Common. [Low. Carolina.]

Asci .08 m.m. long.

2267. Phacidium minutissimum. *And.* "Minute Phacidium."

Hypophyllous, gregarious, minute, innate, rounded or angular, brown, soon splitting from the centre in 3-4 laciniae, exposing the whitish disc; asci minute, clavate; sporidia oval, simple.—*Rabh. F.E.* no. 228. *Fckl. Sym. Myc.* p. 263. *Fckl. exs.* no. 1098.

On oak leaves. Shere. Dr. Capron.

2268. Phacidium abietinum. *Schm.* "Fir leaf Phacidium."

Erumpent, sub-rotund, convex, then depressed, black, splitting into 3-4 obtuse laciniae; disc cinereous; asci stipitate, oblong-

ovate; sporidia oblong, minute.—*Kze. M.H.* i. p. 35. *Fr. S.M.* ii. p. 576. *Fckl. Sym. Myc.* p. 262.

On leaves of Scotch fir.

(A. Jerdon.)

Orbicular or subovate $\frac{1}{2}$ -1 line broad, opaque, allied to *P. lacerum*.—*Fries.*

2269. Phacidium repandum. *Fr.* "Repand Phacidium."

Innate, subrotund, pallid-green, at length black, splitting into unequal obtuse laciniae; disc dingy-brown; asci linear; spores oblong, minute.—*Fr. S.M.* ii. p. 578. *A. & S. t.* 14, f. 6. *Eng. Fl.* v. p. 293. *Cooke L.F.* no. 81. *Cooke exs.* no. 283.

On stems and leaves of various plants.

The habit, size, and general appearance is more like that of a *Peziza* or *Ascobolus* than a *Phacidium*. The plants on which it occurs (as *Asperula odorata* and *Sherardia*) are often still living when the parasite makes its appearance. Fockel considers that three species are confounded together under *Phacidium repandum*. *Fr.*

2270. Phacidium trifolii. *Bond.* "Clover Phacidium."

Sessile, epiphyllous, minute, rather plane, smooth, pale yellow; sporidia elliptical, rather small, sometimes with a nucleus at each end.—*Boud. Ann. Sc. Nat.* (1869). x. p. 69. *Ascobolus Trifolii* *Biv. Bernh. St. rar. t.* 6, f. 3. *Berk. exs.* no. 69. *Fr. S.M.* ii. p. 165. *Desm. exs.* no. 520. *Berk. Eng. Fl.* v. p. 209. *Outl.* p. 374. *Cooke Seem. Journ. May* (1864). *Cooke exs.* no. 331. *Pseudopeziza trifolii*, *Fckl. Sym. Myc.* p. 290.

On living clover leaves.

[Mid. Carolina.]

2271. Phacidium ranunculi. *Desm.* "Crowfoot Phacidium."

Hypophyllous, spots indeterminate, uniform, black, erumpent, subgregarious, unequal; sporidia pyriform, or obovate, with a septum towards the narrow end.—*Dothidea Ranunculi*, *Eng. Fl.* v. p. 287. *Fr. S.M.* ii. p. 562? *Cooke exs.* no. 280. *Berk. exs.* no. 347.

On fading leaves of *Ranunculus repens*, &c.

The asci and sporidia are large for the size of the plant.

2272. Phacidium ilicis. *Fries.* "Holly Phacidium."

STYLOSPORES. Stroma containing 3-5 cells, orbicular, plane, black, shining, penetrating the matrix, splitting into 3-5 plane, short laciniae.—*Ceuthospora phacidiioides*, *Grev. t.* 253. *Eng. Fl.* v. p. 283. *Moug. exs.* no. 560. *D.C. Mem. Mus.* ii. t. 3, f. 8.

var. b. pulveracea. Disc pulverulent; cells sub-triangular, circinating; spores white.—*Desm. exs.* no. 1626. *B. & Br. Ann.*

N.H. no. 437* *Cytispora foliicola*, *Lib. exs.* no. 64. *C. pulveracea*, *Eng. Fl.* v. p. 283.

ASCOPHORE.—Sub-innate, convex, black, dehiscing in 3-5 laciniae; disc whitish; asci clavate; sporidia minute, sausage shaped.—*Fres. Beitr. t.* 8, *f.* 17-21. *Tul. Carp.* iii. *p.* 138. *P. multivalve*, *Fr. S.M.* ii. *p.* 576. *Sph. bifrons*, *Sow. t.* 316. *S. Hederae*, *Nees. f.* 53.

On dead holly leaves. Scotland (*A. J.*).

2273. *Phacidium simulatum.* *B. & Br.* "Mint Phacidium."

Erumpent, cup-shaped, margin irregular; disc linear, red-brown; sporidia obovate, binucleate.—*B. & Br. Ann. N.H.* no. 967, *t.* 16, *f.* 20.

On dead stems of *Clinopodium*. Langridge, Somerset.

Linear but cup-shaped, erumpent with an irregular margin; disc linear, red-brown; asci clavate; sporidia obovate ($\cdot 0004$ inch), $\cdot 01$ m.m. long binucleate.

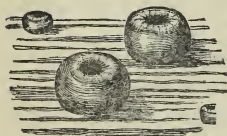
2274. *Phacidium rubi.* *Fr.* "Bramble Phacidium."

Innate, roundish, hemispherical or plane, rugulose, black; splitting into obtuse, unequal laciniae; disc whitish; paraphyses curved at the tips; sporidia linear, rounded at the ends with 6-8 nuclei.—*Fr. S.M.* ii. *p.* 578. *Fries. exs.* no. 56. *B. & Br. Ann. N.H.* no. 586.

On dead bramble stems. Spring.

Gen. 321.

HETEROSPHERIA, Grev.



Perithecium globoso-depressed, thin, black, at length open above, and irregularly torn; disc thick, placentæ-form.—*Berk. Outl. p.* 379.

(*Fig.* 356.)



Fig. 356.

2275. *Heterosphaeria patella.*
Grev. "Depressed Heterosphaeria."

Erumpent, sessile, free, at first more or less olivaceous, at length black, even; disc depressed, rarely open, dirty white, and then crowned with a toothed border; sporidia biseriate, oval, elongate, slightly

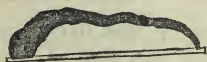
curved, mostly uniseptate, when quite mature triseptate.—*Grev. t. 103. Fr. El. ii. p. 133. Fries. exs. no. 369. Cooke exs. no. 276. Moug. exs. no. 485. Baxt. exs. no. 30. Tode. f. 121. Fckl. exs. no. 1117. Phacidium patella, Eng. Fl. v. p. 291. Berk. exs. no. 289.*

On dead stems of herbaceous plants. Spring.

Sporidia (0007 in.), 0177 m.m. long. Seldom found with perfect fruit. (Fig. 356.)

Gen. 322.

RHYTISMA, Fr.



Perithecia forming a confluent mass, opening by flexuous fissures.—*Berk. Outl. p. 379. (Fig. 357.)*

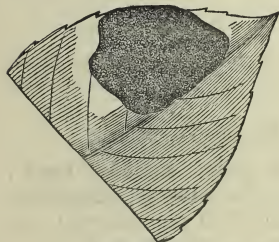


Fig. 357.

2276. *Rhytisma maximum*. Fr. "Great Rhytisma."

Subinnate, very broad, even lobed at the circumference, bursting in fragments, stratum under the disc white; sporidia ovate, uniseriate.—*Fr. S.M. ii. p. 566. Eng. Fl. v. p. 290. Tul. Carp. iii. p. 122, t. xvi. f. 9-15. Fries. exs. no. 250. Sph. aurea, Sow. t. 356.*

On willow branches.

Forming bullate black patches on the young branches, adnate with the epidermis, shining in the centre dull towards the lobed margin; lobes rounded, with or without a golden yellow border, sometimes confluent and extending several inches. Sporidia 002-0026 m.m. long, 01-013 m.m. broad. *Cryptomyces Wauchii*, *Grev. t. 206. Eng. Fl. v. p. 214. Stictis Wauchii*, *Berk. Outl. p. 375*, is referred by Tulasne to this species.

2277. *Rhytisma andromedæ*. Fr. "Andromeda Rhytisma."

Innate, oblong, costato-rugose, shining; disc dingy cinereous-brown.—*Fr. S.M. ii. p. 566. Sturm. t. 46. Mem. Mus. iii. t. 3, f. 13. Fries. exs. no. 135. Moug. exs. no. 176. Eng. Fl. v. p. 290.*

On living leaves of *Andromeda polifolia*.

"Resembling pitch poured upon the leaves."

2278. *Rhytisma salicinum*. Fr. "Willow Rhytisma."

Innate, thick, tuberculose, black, somewhat shining, bursting in scales; disc yellowish, straw-colour, white within; asci linear-clavate; sporidia filiform or lanceolate, straight or curved—*Fr.*

S.M. ii. p. 568. *Grev. t.* 118, f. 2. *Mem. Mus.* iii. t. 3, f. 5. *Nees. f.* 20. *Pers. Disp. t.* 2, f. 4. *Schm. exs. no.* 37. *Moug. exs. no.* 175. *Eng. Fl.* v. p. 290. *Tul. Carp.* iii. p. 119, t. 15, f. 13-22. *Fckl. exs. no.* 1084, 1085. *Berk. exs. no.* 43.

On willow leaves. Common. [Low. Carolina.]

The plant does not appear with an open disc until the spring, the dead leaves having laid on the ground through the winter, when, as in the next species, the fruit is matured; sporidia 1 m.m. long. (*Fig.* 357.)

2279. *Rhytisma acerinum.* Fr. "Maple Rhytisma."

SPERMOGONIA.—Epiphyllous, scattered or confluent, forming black, suborbicular pustular spots, encircled with a discoloured zone; spermatia cylindrical, linear, hyaline, straight or curved, .0065 m.m. long.—*Melasmia acerina*, *Lev. Ann. Sc. Nat.* 1846, p. 276. *B. & Br. Ann. N.H.* no. 443.

ASCOPHORE.—Innate, spots irregular, confluent, rugose, bursting by flexuose labiate fissures; disc growing pale; asci obovate-lanceolate; sporidia filiform-lanceolate, flexuose.—*Fr. S.M.* ii. p. 569. *Bull. t.* 504, f. 13. *Berk. exs. no.* 194. *Cooke exs. no.* 181. *Nees. f.* 21. *Mem. Mus.* iii. t. 3, f. 9. *Grev. t.* 118, f. 1. *Schm. exs. no.* 105. *Moug. exs. no.* 77. *Eng. Fl.* v. p. 290. *Tul. Carp.* iii. p. 117, t. xv. f. 9-12. *Fckl. exs. no.* 1082.

On sycamore and maple leaves. Common. [United States.]

Sporidia .08 m.m. long.

2280. *Rhytisma punctatum.* Fr. "Punctate Rhytisma."

Innate, crowded, angular or roundish, rugose, shining black, bursting in little fragments, internally brownish-black; sporidia linear, the length of the ascus, hyaline.—*Fr. S.M.* ii. p. 569. *Mem. Mus.* iii. t. 3, f. 4. *Eng. Fl.* v. p. 291. *Moug. exs. no.* 477.

On sycamore leaves. [Mid. Carolina.]

It is doubtful whether this is really distinct from the foregoing. I think not, but never having met with perfect fruit it is inserted.

2281. *Rhytisma urticæ.* Fr. "Nettle Rhytisma."

Innate, cohering in an elongated, ambient crust, tubercles slightly prominent, even, bursting by a slightly flexuous fissure; sporidia filiform, the length of the ascus.—*Fr. S.M.* ii. p. 570. *Eng. Fl.* v. p. 291. *Fries. exs. no.* 209. *Moug. exs. no.* 865. *Fckl. exs. no.* 1089. *Cooke exs. no.* 392.

On nettle stems. Winter and spring.

Gen. 323.

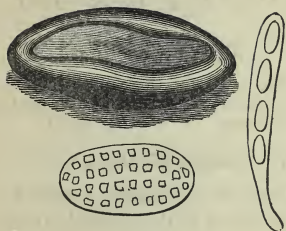
TRIBLIDIUM, Reb.

Fig. 358.

Perithecium labiate, splitting from the centre towards the circumference.—*Berk. Outl. p. 379.*
(Fig. 358.)

2282. Triblidium caliciiforme.
Reb. "Solitary Triblidium."

Solitary, sub-sessile, globoso-depressed, rugoso-verrucose from minute cracks, opaque, black, bursting with obtuse laciniae; disc pallid; asci cylindrical, tetrasporous; sporidia broadly elliptical, fenestrate.—*Fr. S.M. ii. p. 183. Pers. M.E. i. t. 2, f. 3, 4. Fckl. exs. no. 1101. B. & Br. Ann. N.H. no. 775. Chev. t. 8, f. 9. Phacidium caliciiforme, Eng. Fl. v. p. 291.*

On branches of lime and oak.

[Mid. Carolina.]

Sporidia variable in length, sometimes ($\cdot 002$ in.) $\cdot 05$ m.m. (Fig. 358.)

Gen. 324.

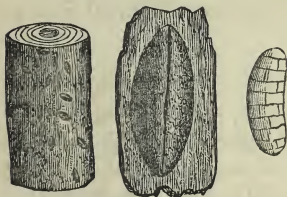
HYSTERIUM, Tode.

Fig. 359.

Perithecium labiate, border entire; orifice narrow, linear; asci elongated.—*Berk. Outl. p. 380. Fr. S.M. ii. p. 579.*
(Fig. 359.)

Sub-Gen. a. GENUINÆ.

Sporidia ovoid or ellipsoid, tri- or multi-septate, or muriform, mostly coloured.

2283. Hysterium pulicare. *Pers. "Common Hysterium."*

Superficial, elliptic or oblong, longitudinally striate, black; lips obtuse; disc linear; asci clavate; paraphyses filiform; sporidia oblong, triseptate, brown, the terminal joints soon hyaline.—*Duby. Hist. p. 25. Fr. S.M. ii. p. 579. Mich. t. 54, f. 2.*

Nees. f. 302. *Moug. exs. no.* 266. *Grev. t.* 167, *f.* 1. *Eng. Fl. v. p.* 293. *Corda. v. f.* 61. *Desm. exs. no.* 779. *Fckl. exs. no.* 749.

On trunks of trees. Common. [United States.]

The sporidia are at first uniseptate and hyaline, but ultimately become triseptate and brown. Sporidia (·00075-·0009 in.) ·018-·022 m.m.

2284. *Hysterium angustatum.* A. & S. "Narrow Hysterium."

Superficial, elongated, linear, nearly smooth, black, opaque; asci cylindrico-clavate; sporidia oblong, triseptate, brown.—A. & S. *Consp. no.* 158. *Rabh. exs. no.* 720.

On twigs, bark, wood, &c.

This species is evidently as common as *H. pulicare*, from which the sporidia differ in being considerably smaller (·0004-·0005 in.) ·01-·0125 m.m., with the terminal joints coloured. The sporidia in *H. pulicare* are ·00025 in. broad, whilst in this species not more than ·00015 in.

2285. *Hysterium repandum.* Blox. "Repand Hysterium."

Perithecia almost free, elliptic; the lips well rounded; aperture gaping; asci rather short; sporidia broadly cymbiform, brown, the apex at one end very slightly elongated and hyaline.—*Duby Hyst. p.* 27, *t.* 1, *f.* 6. *B. & Br. Ann. N.H.* (1866), *no.* 1181, *t.* 5, *f.* 38.

On rotten stumps. Twycross.

Sporidia (·0006-·0007 in.) ·015-·0177 m.m. long.

2286. *Hysterium varium.* Fr. "Variable Hysterium."

Scattered over pallid spots; perithecia elliptic, subimmersed, with a slight keel, and very obscure aperture, quite even; asci elongated; sporidia uniseriate, elliptic, slightly pointed at either end, uniseptate, nucleate.—*Fr. S.M. ii. p.* 582. *Duby Hyst. p.* 28. *B. & Br. Ann. N.H.* (1866), *no.* 1180, *t.* 5, *f.* 37.

On decorticated branches of yew. April. Wynd Cliff.

Sporidia, with a large nucleus in each division (·001 in), ·025 m.m. long, by (·0005 in.) ·0127 m.m. broad. At first hyaline, at length pale brown.

2287. *Hysterium Rousselii.* De Not. "Roussel's Hysterium."

Erumpent, oblong or linear, obtuse, parallel, or irregularly disposed, black, opaque, longitudinally striate; asci subcylindrical; sporidia oblong, more or less constricted in the middle, 3-5 septate, fenestrate, hyaline, then more or less brownish.—*Duby.*

Hyst. p. 28, t. i. f. 7. *Moug. exs.* no. 1184. *Desm. exs.* no. 184. *Fckl. exs.* no. 751.

On twigs.

[N. America.]

Probably not uncommon. It has been collected by F. Currey, Esq., and Dr. Capron.

2288. *Hysterium elongatum.* Wahl. "Elongated Hysterium."

Superficial, oblong, straight, nearly even, opaque, black; lips swollen; disc linear; asci broadly clavate; paraphyses filiform; apices clavulate; spores biseriate, ovato-oblong 8-9 septate, at length dark-brown.—*Fr. S.M.* ii. p. 581. *Berk. Outl.* p. 380. *Duby Hyst.* p. 29, t. 1, f. 9. *Corda. t.* 9, f. 62. *Eng. Fl.* v. p. 293. *Fckl. exs.* no. 1754.

On decorticated wood, and rose stems.

[S. Carolina.]

The sporidia are very fine.

2289. *Hysterium fraxini.* Pers. "Ash Hysterium."

Erumpent, elliptic, hard, black; lips swollen, even; disc linear; asci broad, clavate; paraphyses filiform; sporidia large, oblong, at first pale, then intense olive-brown, at first uniseptate, at length transversely and longitudinally multiseptate (muriform).—*Duby Hyst.* p. 29. *Fr. S.M.* ii. p. 585. *Fckl. exs.* no. 747. *Desm. exs.* no. 83. *Rabh. exs.* no. 167. *Letell. t.* 651, f. 2. *Cooke exs.* no. 398. *Moug. exs.* no. 267. *Grev. t.* 72. *Pers. Syn. t.* 2, f. 5-8. *Baxt. exs.* no. 33. *Eng. Fl.* v. p. 294. *Sphæria sulcata*, *Bolt. t.* 124. *Sow. t.* 315.

On small ash branches. Common.

[Low. Carolina.]

(*Fig.* 359.)

2290. *Hysterium curvatum.* Fr. "Curved Hysterium."

Erumpent, then superficial, prominent, aggregate, linear, elongated, flexuose or incurved, black, shining, whitish within; lips rather swollen, connivent, longitudinally striate, mouth linear; asci clavate, or somewhat cylindrical; paraphyses filiform, thickened at the apex; sporidia ellipsoid, hyaline, multi-nucleate, at length fenestrate.—*Fr. El.* ii. p. 138. *Duby Hyst.* 31. *B. & Br. Ann. N.H.* no. 587. *H. elongatum*, β . *Fr. El.* ii. p. 138.

On branches of sloe, rose and bramble.

Sporidia ('0005-'0006 in.), '0125-'015 m.m. long, by ('00015 in.) '0035 m.m. broad.

2291. *Hysterium Carmichaelianum*. Berk. "Carmichael's *Hysterium*."

Superficial, substipitate, short, linear, or subelliptic, black, opaque, not even; lips obtuse, inflexed; asci and sporidia?—*Berk. Eng. Fl.* v. p. 294. *Hysterium varium*, *Grev. t.* 233.

On smooth oak bark. Appin.

This species rests entirely upon Greville's figure, and must be regarded as doubtful. Dr. Curtis quotes it as found on bark of *Liquidambar* in Lower Carolina.

Sub-Gen. b. GLONIUM.

Sporidia bilocular, hyaline.

2292. *Hysterium (Glonium) lineare*. Fr. "Linear *Glonium*."

Subimmersed, crowded, parallel, linear, black; lips slightly swollen, even; disc linear; asci clavate or clavato-cylindrical; sporidia ovoid, hyaline, rarely subconstricted in the middle.—*Fr. S.M.* ii. p. 583. *Nees. f.* 303. *Moug. exs. no.* 563. *Grev. t.* 167, f. 2. *Eng. Fl.* v. p. 294. *Glonium lineare*, *Duby Hyst. p.* 35.

On wood.

[United States.]

2293. *Hysterium (Glonium) amplum*. Duby. "Broad *Glonium*."

Perithecia congregated together, or crowded, subdepressed, furcate and branched; asci elongato-clavate; sporidia biseriate, uniseptate, not constricted, hyaline.—*Duby Hyst. p.* 37. *Ailographum amplum*, *B. & Br. Ann. N.H. no.* 782.

On decaying stems of *Rubi*. Twycross.

Sub-Gen. c. HYPODERMA.

Asci clavate, attenuated below; sporidia cylindrical, curved (sausage-shaped), hyaline, rarely septate.

2294. *Hysterium (Hypoderma) ilicinum*. De Not. "Oak-leaf *Hysterium*."

Epiphyllous, scattered, elliptic, obtuse, grey-black, about twice as long as broad; lips convex, tumid, at first connivent, then divergent; disc whitish; asci clavate, pedicellate; sporidia linear-cylindrical, somewhat curved, obtuse, hyaline 2-4 celled.—*Duby*

Hyst. p. 40. *H. foliicolum*, γ . *maculare* Berk. *Eng. Fl.* v. p. 296. Berk. *exs. no.* 95. *H. maculare*, Grev. *t.* 129, f. 2.

On dry oak leaves.

[Low. Carolina?]

2295. *Hysterium (Hypoderma) virgultorum.* D.C. "Twig *Hysterium.*"

Subinnate, longitudinally placed, elongated, acute, even, shining, black, at length gaping, internally grey; asci clavate, obtuse, longly pedicellate; paraphyses filiform; sporidia hyaline, linear-ellipsoid, obtuse at both ends.—*Hyst. Rubi*, Fr. *S.M.* ii. p. 587. *Eng. Fl.* v. p. 295. *Schm. exs. no.* 30. *Moug. exs. no.* 564. Grev. *t.* 24. *Lib. exs. no.* 177. *Desm. exs. ii. no.* 172-178. *Tul. Ann. Sc. Nat.* 3, ser. xx. *t.* 15, f. 10-14. *Fckl. exs. no.* 757.

On dead stems of bramble.

[United States.]

2296. *Hysterium (Hypoderma) commune.* Fr. "Common *Hysterium.*"

SPERMOGONIA.—Simple, subrotund, variable, rugulose, shining, at length seceding; spermatia simple, minute.—*Leptostroma vulgare*, Fr. *S.M.* ii. p. 599. B. & Br. *Ann. N.H.* no. 205. *Moug. exs. no.* 674. *Fckl. exs. no.* 197. *Tul. Ann. Sc. Nat.* iii. *t.* 20, p. 155.

ASCOPHORE.—Innate, oblong, obtuse, opaque, black; lips subrugose, fragile; disc dingy; asci more or less elongated from the base, ovato-clavate; sporidia hyaline, linear, obtuse; paraphyses filiform, flexuose, short.—Fr. *S.M.* ii. p. 589. *Letell. t.* 650, f. 5. *Rabh. exs. ii. no.* 576. B. & Br. *Ann. N.H.* no. 588. *Fckl. exs. no.* 755.

On dead stems of herbaceous plants.

[United States.]

2297. *Hysterium (Hypoderma) hederæ.* De Not. "Ivy *Hysterium.*"

Amphigenous, scattered, innato-superficial, elliptico-ovate, black, shining; lips acute at the edge, at first tumid, connivent, at length depressed; disc brown-black; asci clavate; paraphyses thickened at the apex; sporidia oblong-ovoid, straight, hyaline.—*Duby Hyst. p.* 42. *H. Hederæ*, Corda v. *t.* 9, f. 5. *Rabh. exs. no.* 1954. *Desm. exs. ii. no.* 180. *H. foliicolum*, β . *Hederæ* Fr. *Eng. Fl.* v. p. 294. *Moug. exs. no.* 1075. *Lib. exs. no.* 72. Grev. *t.* 129, f. 1. *Fckl. exs. no.* 756.

On ivy leaves.

Often seated on a pale spot.

- 2298. *Hysterium (Hypoderma) conigenum.*** *Fr.* "Fir-cone *Hysterium.*"

Erumpent, small, punctiform, shining, bursting by a longitudinal fissure; asci clavate; sporidia cylindrical, obtuse, straight, or curved.—*Fr. S.M.* ii. p. 586. *Moug. exs.* no. 75. *Eng. Fl.* v. p. 294.

On fallen cones of Scotch fir. Shere. (*E.C.*)

"Confined to the upper and exposed part of the scales."

Excluded by Duby (*Hyst.* p. 52) as not belonging to the *Hysteriaceæ*, but evidently a good species.

Sub-Gen. d. LOPHODERMIIUM.

Asci dehiscent, clavate; sporidia filiform.

- 2299. *Hysterium (Lophodermium) xylomoides.*** *Chev.*
"Leaf *Hysterium.*"

Innato-superficial, scattered, elliptic, obtuse, slightly swollen, even, black, opaque; lips broad, depressed; asci clavate, acutely pedicellate; sporidia hyaline, filiform, parallel in the ascus, flexuous and contorted when free.—*Duby Hyst.* 1, p. 45. *Pers. Ic. & Desc.* ii. t. 10, f. 3, 4. *H. foliolum*, *Fr. S.M.* ii. p. 592. *Eng. Fl.* v. p. 296 (partly). *Lib. exs.* no. 72. *Desm. exs.* no. 995. *Rabh. exs.* ii. no. 156. *Fckl. exs.* no. 742. *Berk. exs.* no. 196.

On dry leaves of *Rosaceæ* and berberry. Common on hawthorn leaves. [United States.]

- 2300. *Hysterium (Lophodermium) melaleucum.*** *Fr.*

Hypophyllous, innate, elliptic, even, black; lips sub-connivent, white; asci clavate, not pedicellate; sporidia filiform, pale yellow.—*Fr. S.M.* ii. p. 589. *Eng. Fl.* v. p. 295. *Fr. Obs.* i. t. 2, f. 1. *Schm. exs.* no. 81. *Moug. exs.* no. 654. *Grev. t.* 88. *Lib. exs.* no. 178. *Fckl. exs.* no. 736.

On dead leaves of *Vaccinium Vitis Idæa*. Scotland.

- 2301. *Hysterium (Lophodermium) maculare.*** *Fr.* "Spot *Hysterium.*"

Seated on pallid spots, innate, oval, subdepressed, even, pruinose, black; lips rufescent; asci clavate, scarcely attenuated at the base; sporidia filiform, hyaline.—*Fr. S.M.* ii. p. 592. *Duby Hyst.* p. 45. *Fries. exs.* no. 167. *Moug. exs.* no. 1072. *Desm. exs.*

ii. no. 561. *Grev. t.* 129, *f.* 2. *Lib. exs. no.* 370. *Berk. Outl. p.* 380. *Fckl. exs. no.* 1752.

On leaves of *Vaccinium*.

**2302. *Hysterium (Lophodermium) pinastri.* *Schrad.*
 “Pine-leaf *Hysterium*.”**

Epiphyllous, innato-immersed, oval-oblong, longitudinally striate, blackish, opening with an elliptic mouth; disc livid; asci elongated, clavate, not pedicellate; sporidia filiform, hyaline, incrassated at the apex.—*Fr. S.M.* ii. *p.* 587. *Eng. Fl.* v. *p.* 295. *Fckl. exs. no.* 734. *Cooke exs. no.* 396. *Schrad. J. Bot. t.* 3, *f.* 4. *Moug. exs. no.* 76. *Schm. exs. no.* 135. *Grev. t.* 60. *Tul. Carp.* iii. *p.* 113.

On pine leaves. Common.

[United States.]

**2303. *Hysterium (Lophodermium) juniperinum.* *De Not.*
 “Juniper *Hysterium*.”**

Hypophyllous, minute, at first punctiform, innato-emergent, scattered, convex or flattened, elliptic, obtuse, scarcely rising above the matrix, black, shining; lips closely connivent, at length opening by a narrow fissure; asci clavate, sessile; sporidia filiform, straight or curved.—*Duby Hyst. p.* 46. *Grev. t.* 26. *Cooke exs. no.* 395. *Rabh. exs. no.* 1658, ii. 445. *H. Pinastri*, β . *Juniperinum*, *Fr. S.M.* ii. *p.* 588. *Desm. exs. no.* 780, ii. 183. *Eng. Fl.* v. *p.* 295. *Fckl. exs. no.* 735.

On Juniper leaves.

Perithecia scarcely one and a half times as long as broad. Asci .001 m.m. long.

**2304. *Hysterium (Lophodermium) arundinaceum.* *Schrad.*
 “Reed *Hysterium*.”**

Innate, oval, depressed, rugulose, opaque, brownish-black, opening longitudinally, at length gaping; asci clavate, not pedicellate; sporidia filiform, hyaline.—*Fr. S.M.* ii. *p.* 590. *Berk. exs. no.* 94. *Fckl. exs. no.* 737. *Cooke exs. no.* 394. *Moug. exs. no.* 655. *Fries exs. no.* 328. *Eng. Fl.* v. *p.* 295. *Desm. exs. no.* 85. *Rabh. exs. i. no.* 1151, ii. *no.* 34, & i. *no.* 357, ii. *no.* 575. *H. culmigenum*, *Fr. Obs. ii. t.* 7, *f.* 3. *Fckl. exs. no.* 738. *Fr. exs. no.* 97. *Desm. exs. no.* 238. *Eng. Fl.* v. *p.* 296. *Grev. t.* 87.

On sheaths of reeds and grasses.

[Mid. Carolina.]

2305. Hysterium (Lophodermium) typhinum. *Fr.* "Club-mace Hysterium."

Innate, oblong, covered by the bullate epidermis, at length naked, black; lips slightly swollen, parallel; asci cylindrical; sporidia filiform, hyaline.—*Fr. S.M. ii. p. 590. B. & Br. Ann. N. H. no. 589.*

On leaves of *Typha latifolia*.

Gen. 325.

SPOROMEGA, Corda.

Receptacle horny; asci elongated, clavate; sporidia filiform, when mature separating above, and united at the base.

(*Fig. 360.*)

2306. Sporomega cladophila.
Lev. "Whortlebury Sporomega."

Sub-innate, oblong-elliptic, at first brownish, from the almost adnate cuticle, at length, naked, black; lips acute, not inflexed; disc linear; asci cylindrical; sporidia filiform, hyaline.—*Hysterium vaccinii, Carm, Eng. Fl. v. p. 295. Sporomega cladophila, Duby Hyst. p. 48. Fckl. exs. no. 1967.*

On stems of *Vaccinium myrtillus*. *Appin.*

In its early stage of growth it appears like a brown spot, as it swells the cuticle is raised up, and at length splits longitudinally, and for a long time closely covers the two lobes of the perithecium.—*M.J.B. (Fig. 360.)*

Gen. 326.

COLPOMA, Wallr.

Perithecia between coriaceous and spongy, flexuose, elliptic or linear; base plane, adnate, at first closed, then opening with a longitudinal fissure; lips soon divergent and open; nucleus gelatinous; asci elongato-clavate; sporidia filiform, free above, fixed at the base.—*Duby Hyst. p. 50. (Fig. 361.)*

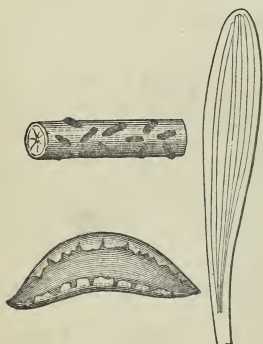


Fig. 360.

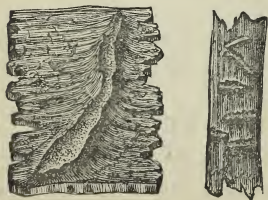


Fig. 361.

2307. Colpoma quercinum. Wallr. "Oak-twigg Colpoma."

Simple, gregarious, elongated, flexuose, at first closed, pruinose, blackish cinereous, at length open; disc broad, pallid; asci clavate; sporidia filiform.—*Duby. Hyst. p. 50. Fckl. exs. no. 760. Cooke exs. no. 397. Cenangium quercinum, Eng. Fl. v. p. 212. Berk. exs. no. 26. Clithris quercinum, Fr. S.M. ii. p. 189. Bull. t. 452, f. 4. Tode. t. 8, f. 64. Moug. exs. no. 367. Sphæria collapsa, Sow. t. 373, f. 3. Hyst. quercinum, Nees. f. 300. Schm. exs. no. 65.*

On oak twigs. Common.

[Mid. Carolina.]

(Fig. 361.)

Gen. 327.**AILOGRAPHUM, Lib.**

Fig. 362.

Perithecia minute, linear, or elliptico-linear, simple or branched, opening with a narrow, longitudinal fissure; asci sacciform, ovoid-oblong.—*Lib. Exs. no. 272. Duby Hyst. p. 37. (Fig. 362.)*

2308. Ailographum vagum. Desmaz. "Holly-leaf Ailographum."

Perithecia innato-superficial, scattered, elliptical, or linear-ovate, simple or forked, black, opaque; lips closely connivent, acute; asci ellipsoid, attenuated from the base; spórídía very minute, oblong.—*Ann. Sc. Nat. xix. p. 362. Desm. exs. no. 1529. Duby Hyst. p. 38. A. Hederæ, Lib. exs. 272. Rabh. exs. no. 1055, ii. no. 528. Hyst. micrographum, De Not. Micro. Ital. iv. f. 3.*

On dry coriaceous leaves. (Shere, M.C.C.)

The perithecia are scarcely visible to the naked eye.

2309. Ailographum maculare. B. & Br. "Spot Ailographum."

Perithecia mostly simple, sub-concentric, disposed in orbicular spots; asci short, oblong; sporidia oblongo-clavate.—*Br. & Br. Ann. N.H. no. 968, t. 16, f. 21.*

On an old mat made of *Typha*. May. Hainault Forest.

Forming little orbicular black patches, in which the perithecia are disposed in a somewhat concentric fashion; perithecia mostly simple; asci short, oblong; sporidia oblongo-clavate (.0005 in.) .0125 m.m. long. Mycelium matted, brown, producing here and there dark patches; very distinct in habit, and in the longer asci.

(Fig. 362.)

ASTERINA BABINGTONII, Berk. is claimed by lichenologists under the name of *Strigula Babingtonii*. It is at the best a very doubtful fungus.

Gen. 328.

ACTIDIUM, Fr.

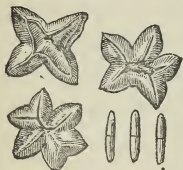


Fig. 363.

Perithecia free, carbonaceous, black, fragile, stellate, opening from the centre in radiating fissures; asci clavate, evanescent; paraphyses none.—*Fr. Obs. i. p. 190. Duby Hyst. p. 43. (Fig. 363.)*

2310. Actidium hysterioides. Fr. "Stellate Actidium."

Perithecia stellate, gregarious, punctiform, black, even, at first rounded, then 4-6 gonate, radiato-stellate, somewhat closed; asci clavate, sporidia cylindrical, straight.—*Fr. S.M. ii. p. 596. Curr. Linn. Trans. xxiv. p. 155.*

On chips of wood under fir trees. Weybridge. May.

(Fig. 363.)

Gen. 329.

LOPHIUM, Fr.

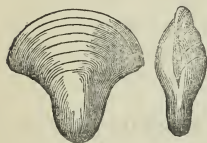


Fig. 364.

Perithecia stipitate, wedge-shaped, opening with a narrow, longitudinal fissure; asci elongated.—*Berk. Outl. p. 381. (Fig. 364.)*

2311. Lophium elatum. Grev. "Elongated Lophium."

Stipitate, compressed, black, transversely striate, dilated gradually upwards into an elongated wedge-shaped perithecium; asci cylindrical; sporidia filiform, multiseptate.—*Grev. t. 177, f. 2. Fr. El. ii. p. 113. Eng. Fl. v. p. 281.*

On fir wood. Rare. Appin.

2312. Lophium mytilinum. Fr. "Shell Lophium."

Shortly pedicellate, much dilated upwards, transversely striate, black, shining; asci cylindrical; sporidia filiform, multiseptate.

—*Fr. S.M.* ii. p. 533. *Grev. t.* 177, f. 1. *Nees. f.* 301. *Eng. Fl.* v. p. 280. *Fckl. exs.* no. 762.

On bark or wood of fir trees.

(*Fig.* 364.)

Gen. 330.

STEGIA, Fr.



Fig. 365.

ilicis, *Eng. Fl.* v. p. 280. *Fckl. exs.* no. 1589. *Fries. exs.* no. 417. *Moug. exs.* no. 82. *Sph. concava*, *Sow. t.* 317. *Xyloma concava*, *Grev. Fl. Ed.* p. 368. *Baxt. exs.* no. 77.

On holly leaves. Common.

(*Fig.* 365.)

Gen. 331.

TROCHILA, Fr.

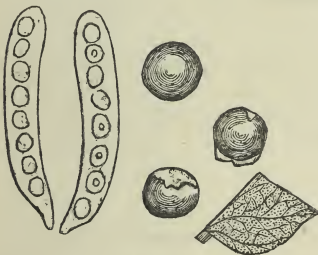


Fig. 366.

Disc innate, erumpent, placed upon a black hypothecium, persistent.—*Berk. Outl.* p. 381. *Fr. S.V.S.* p. 367. (*Fig.* 366.)

2314. Trochila lauro-cerasi. Fr. "Laurel Trochila."

Hypophyllous, orbicular, punctiform, hollow when collapsed, at length black, splitting into three acute laciniae; asci linear; spordia oblong, uniseriate.—*Fr. S.V.S.* ii. p. 367. *Fckl. exs.* no. 1112. *Cooke exs.* no. 179. *Phacidium Lauro-cerasi*, *Desm. exs.* no. 188. *Eng. Fl.* v. p. 293. *Moug. exs.* no. 985. *Ayres. ex.* no. 72. *Berk. exs.* no. 45.

On fallen laurel leaves. Common.

Disc yellowish when moist. Spordia (·0003-·0004 in.) ·0075-·01 m.m long.

2315. *Trochila buxi.* Capron. "Box Trochila."

Hypophyllous, blackish, cæspitose or scattered, splitting into minute unequal laciniaë; sporidia oval, elongated.—*E. Capron in litt. T. craterium, var. Buxi.* Auct.

On box leaves.

Sporidia oval, elongated (.0004-.0005 in.), .01-.0125 m.m. long, much larger than in *T. craterium*; contents, when fresh, granular. More closely allied to *T. lauro-cerasi.*—*E. C.*

2316. *Trochila craterium.* Fr. "Ivy-leaf Craterium."

PYCNIDIA.—Stylospores minute, subglobose.—*Myxosporium paradoxum*, *De Not, Micr. Ital. Dec. ii. f. 10. B. & Br. Ann. N.H. no. 439. Glæosporium Notarisii*, *Mont. Ann. Sc. Nat. (1849) xii. p. 296. Fckl. exs. no. 1649.*

ASCOPHORE.—Hypophyllous, scattered, blackish, at length deeply collapsed; asci cylindrical; sporidia very shortly oval, almost round, sometimes with a large nucleus.—*Fr. S.V.S. ii. p. 367. Fckl. exs. no. 1113. Cooke exs. no. 180. Sph. craterium, Eng. Fl. v. p. 277. S. punctiformis, var. β. Hederæ, Grev. Fl. Ed. Baxt. exs. no. 29. Ayres. exs. no. 65.*

On dead ivy leaves. Common. [Mid. Carolina.]

Sporidia nearly globose (.0003 in.) .0075 m.m. long. (Fig. 366.)

Order XXXI. SPHÆRIACEI.

Perithecia carbonaceous or membranaceous, sometimes confluent with the stroma, pierced at the apex, and mostly papillate; hymenium diffluent.—*Berk. Outl. p. 381.*

	A. Nectriæ	} Compound.
pag-788	B. Xylariæ	
809	C. Valsei	
839	D. Sphæriæ . . .	
		Simple.

A. Nectriæ.

Stipitate—

Clavate or capitate *Torrubia.*Head globose, base sclerotoid *Claviceps.*

Parasitic on grass—

Stroma mycelioid *Epichloe.* 773

Variable—

Sporidia didymous, at length separating *Hypocrea.*Sporidia didymous, ejected in tendrils—
parasitic on fungi *Hypomyces.*Stroma definite, perithecia free, clustered or scattered *Nectria.*Perithecia erect, in a coloured sac *Oomyces.***Gen. 332.****TORRUBIA, Lev.**

Stroma vertical, fleshy, clavate or capitate; perithecia immersed; sporidia linear, multi-septate, breaking up into fragments.—*Tul. Carp. iii. p. 4. Cordyceps, Fr. Berk. Outl. p. 381.*

(Fig. 367.)

2317. Torrubia entomorrhiza. Fr.
"Dickson's Torrubia."

Fleshy, head subglobose, brown; stem slender, long; sporidia colourless, long, breaking up into joints.—*Tul. Carp. iii. p. 14, t. 1, f. 12-18. Cordyceps entomorrhiza, Fr. S.M. ii. p. 324. Dicks. t. 3, f. 3. Berk. Outl. t. 23, f. 5. Eng. Fl. v. p. 232. Curr. Linn. Trans. xxii. t. 45, f. 6. Cooke exs. no. 187.*



Fig. 367.

On dead larvæ and pupæ of moths, buried on the ground.
Autumn. [United States.]

Head $\frac{1}{2}$ in. long, broadly elliptic, quite distinct from the stem, changing from chestnut to bright red-brown, minutely dotted with the ostiola, of a tough, fleshy consistence, nearly white within; stem 2 inches high, 1 line thick, nearly equal, pale above, darker below, of the same colour as the head, slightly mottled, almost smooth, giving out at the base numerous root-like filaments; perithecia completely sunk in the flesh, much elongated, tapering to the orifice, brown, contents of the same colour.—*M.J.B.*
(Fig. 367.)

2318. *Torrubia gracilis.* B. "Slender Torrubia."

Head roundish-ovate, even, brown; stem rooting, elongated, cylindrical, somewhat flexuous.—*Tul. Carp. iii. p. 15. Cordyceps gracilis, Berk. Outl. p. 382. Eng. Fl. v. p. 233. Grev. t. 86. D. & M. Fl. Alg. i. p. 449, t. 25, f. 2.*

On the ground in moist places (on larvæ).

Differs entirely from *C. ophioglossoides* in form, and in being destitute of any yellow tinge; the sporidia are also different.—*M.J.B.* It is somewhat doubtful whether this is really distinct from *T. entomorrhiza*.

2319. *Torrubia militaris.* Fr. "Red Torrubia."



Fig. 368.

CONIDIA.—Subcæspitose, white; stem distinct, simple, becoming smooth; clubs incrassated, mealy; conidia globose.—*Isaria farinosa, Fr. S.M. iii. p. 270. Link. Diss. f. 32. Sturm. t. 34. Nees. f. 85. Eng. Fl. v. p. 328. Ramaria farinosa, Sow. t. 308. Holms. i. f. 7.* (Fig. 368.)

ASCOPHORE.—Fleshy, orange-red; head clavate, tuberculose; stem equal; sporidia long, breaking up into joints.—*Tul. Carp. iii. p. 6, t. 1, f. 19-31. Fckl. exs. no. 1067. Cordyceps militaris, Fr. S.M. ii. p. 325. Curr. Linn. Trans. xxii. t. 45, f. 3. Berk. Outl. t. 23, f. 6. Sphæria militaris, Fl. Dan. t. 657, f. 1. Vaill. t. 7, f. 4. Buxb. iv. t. 66, f. 2. Nov. Act. N.C. iv. t. 7, f. 5. Bull. t. 496, f. 1. Bolt. t. 128. Sow. t. 60. Nees. f. 305. Purt. t. 23. Price. f. 63, partly.*

On pupæ of moths buried in the ground. Aug.—Oct.

[United States.]

2320. *Torrubia myrmecophila*. Tul. "Ichneumon Torrubia."

Ochraceous white; stem thread-shaped; club ovoid, sterile below, ribbed above.—*Tul. Carp.* iii. p. 19. *Cordyceps myrmecophila*. *Berk. Outl.* p. 382. *Hypocrea myrmecophila*, *Rabh. exs.* no. 1033. *B. & Br. Ann. N.H.* no. 591.

On an *Ichneumon*. May. Leigh Wood.

2321. *Torrubia ophioglossoides*. Tul. "Adder's tongue Torrubia."

Fleshy; head clavate, brownish-black; stem rooting, olive, becoming blackish; sporidia cylindrical, long, breaking up into joints.—*Tul. Carp.* iii. p. 20, t. 2, f. 1-9. *Cordyceps ophioglossoides*. *Fr. S.M.* ii. p. 324. *Schmied. t.* 5, lower fig. *Bull. t.* 440, f. 2. *Pers. M.E. t.* 10, f. 5-6. *Eng. Fl.* v. p. 233. *Moug. exs.* no. 565. *Fries. exs.* no. 301. *Schm. exs.* no. 26. *Berk. Mag. Zool. & Bot.* no. 92, t. 7, f. 4. *Curr. Linn. Trans.* xxii. t. 45, f. 7.

In woods on *Elaphomyces muricatus*. Oct. [Mid. Carolina.]

Asci very long; paraphyses extremely slender; head $\frac{1}{2}$ -1 in. or more long, yellow within, as well as the stem, which at the base divides into long roots, sometimes tufted; joints of sporidia ($\cdot 0001$ in.) $\cdot 0025$ m.m. long.

2322. *Torrubia capitata*. Fr. "Capitate Torrubia."

Fleshy, head ovato-globose, bay-brown; stem yellow, then blackish; sporidia colourless, jointed, the joints rod-shaped or cylindrical.—*Tul. Carp.* iii. p. 22, t. 2, f. 10-15. *Cordyceps capitata*, *Fr. S.M.* ii. p. 324. *Fl. Dan. t.* 540. *Bolt. t.* 130. *Sow. t.* 354. *Holm. i. p.* 38. *Pers. M.E. t.* 10, f. 1-4. *Eng. Fl.* v. p. 233. *Moug. exs.* no. 763. *Curr. Linn. Trans.* xxii. t. 45, f. 10.

In pine woods on *Elaphomyces granulatus*.

[Low. Carolina.]

Often tufted; stem 1-4 in. high, 2-4 lines thick, equal, smooth, lemon-coloured, at length fibroso-strigose and blackish. The colour of the head borders on yellow, red-brown, and black.—*Fries.* Joints of the sporidia ($\cdot 0003$ in.) $\cdot 0076$ m.m. long.

2323. *Torrubia* (?) *pistillariæformis*. B. & Br. "Doubtful Torrubia."

Very small, club brown; head oblong-ovate; stem cylindrical, pallid, dilated at the base, sub-equal.—*Cordyceps pistillariæformis*, *B. & Br. Ann. N.H.* no. 969, t. 16, f. 22.

On wych elm twigs. Nov.—Feb. Batheaston.

Plant 2 lines high; head oblong-ovate, granulated from the perithecia, which are sunk in its substance, rather longer than the pallid, cylindrical stem, which is slightly swollen at the base. Fruit unknown. Grows on a sclerotoid substance.—*B. & Br.*

Gen. 333.

CLAVICEPS, Tul.

Stroma sclerotoid, sub-cylindrical; fructifying head distinct, fleshy, sub-globose, coloured; asci linear, thickened at the apex; sporidia filiform.—*Tul. Ann. Sc. Nat.* 1853, xx. p. 43.

(*Fig.* 369.)

2324. *Claviceps purpurea.* Tul.
"Purple Claviceps."

STROMA.—Horn-shaped, cylindrical, externally sub-pruinose, purple-black, within white or purplish.—*Sclerotium clavus*, *D.C. Fl. Fr.* vi. p. 115. *Spermædia clavus*, *Fr. S.M.* ii. 268. *Eng. Fl.* v. 226. *Secale cornutum*. *Bald. Diss.* 1771, *et multis aliis*, "Ergot of Rye," &c.

SPERMOGONIA?—Effused, red; stroma expanded; spermatia curved.—*Fusarium heterosporium*, *Nees. N. A. Cur.* ix. 135. *B. & Br. Ann. N.H.* no. 955. *Fckl. Sym. Myc.* p. 186.

CONIDIA.—Elliptical, moniliform, finally separating, with one or more granules.—*Oidium abortifaciens*, *B. & Br. Ann. N.H.* no. 545. *Ergotetia abortifaciens*, *Quek. Linn. Trans.* xviii. 471.

ASCOPHORE.—Fleshy, pale purple; head globose, tuberculose; stem short, flexuous; sporidia filiform colourless, attenuated at each end, variable in length.—*Tul. Ann. Sc. Nat.* 1853, xx. t. 3. *Cordyceps purpurea*, *Fr. S.M.* ii. p. 325. *Berk. Outl.* p. 382. *Curr. Linn. Trans.* xxii. t. 45, f. 25. *Fl. Dan.* t. 1781. *Fckl. exs.* no. 1068.

On grains of corn and grasses.

Sporidia ($\cdot 002$ – $\cdot 003$ in.) $\cdot 05$ – $\cdot 076$ m.m.

(*Fig.* 369.)

2325. *Claviceps microcephala.* Tul. "Small-headed Claviceps."

STROMA.—Horn shaped, cylindrical, blackish, internally whitish.—*Sclerotium clavus*, *D.C. var. phragmitis*, "Reed Ergot," &c.



Fig. 369.

ASCOPHORE.—Minute; head globose; stem long, slender, flexuous; asci with a distinct hyaline knob at the apex; sporidia colourless, filiform, attenuated at either end.—*Tul. Ann. Sc. Nat.* 1853, xx. t. 4, 5. *Fckl. exs. no.* 1069. *Cordyceps microcephala*, *Berk. Outl. p.* 382. *Sphæria Hookeri*, *Eng. Fl. v. p.* 234? *Curr. Linn. Trans. xxii. p.* 264.

On seeds of reed, &c.

Sporidia ('002-'0034 in.) '05-'08 m.m.

CLAVICEPS NIGRICANS, *Tul. Ann. Sc. Nat.* 1853, xx. t. 4, f. 15-22.

The stroma (ergot) is common enough in Britain on *Eleocharis*, but the mature *Claviceps* (ascophore) has not been found.

Gen. 334.

EPICHLÖE, Fr.

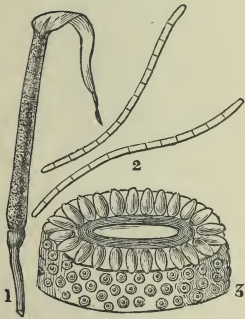


Fig. 370.

Parasitic on grass, coloured; perithecia fleshy, immersed in a mycelioid stroma; sporidia linear.—*Fr. S. V. S. Tul. Carp. iii. p.* 24. (Fig. 370.)

2326. *Epichloe typhina*. *Berk.* “Grass Epichloe.”

Elongated, innate, surrounding the stem, dirty white, soon orange-yellow, at length granulated from the projecting ostiola; sporidia cylindrical, straight, with numerous nucleoli.—*Tul. Carp. iii. p.* 24.

Fckl. Sym. Myc. p. 186. *Hypocrea typhina*, *Berk. Outl. p.* 383. *Dothidea typhina*, *Fr. S.M. ii. p.* 553. *Sphæria typhina*, *Pers. Ic. & Desc. t. 7, f. 1. Eng. Fl. v. p.* 285. *Moug. exs. no.* 79. *Fries. exs. no.* 37. *Schm. exs. no.* 4. *S. spiculifera*, *Sow. t.* 274. *Stromatospheria typhina*, *Grev. t.* 204.

On living grasses. Common. [Low. & Mid. Carolina.]

The grass affected with this curious parasite mimics the reed mace (*Typha*) in its appearance. It surrounds the stalks to an extent varying from half an in. to 2 in., is white in its earliest state, but in a few days acquires the orange-yellow colour of maturity.—*Johnst. Fl. Ber.* (Fig. 370.)

Gen. 335.

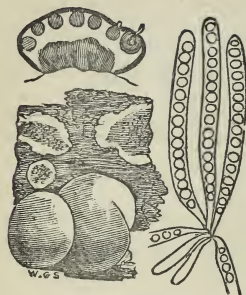
HYPOCREA, Fr.

Fig. 371.

Stroma variable; perithecia fleshy, pallid or coloured, ovato-globose and obtuse; asci eight spored; sporidia uniseriate, didymous, with two globose and equal cells, at length separating.—*Fr. S.M.* ii. 335. *Tul. Carp.* iii. p. 29. (Fig. 371.)

2327. Hypocrea gelatinosa. Fr. "Gelatinous Hypocrea."

Fleshy, convex, equal, opaque, internally whitish; perithecia prominent; darker than the stroma; sporidia colourless, squarish in the ascus, nearly round when free.—*Fr. S.M.* ii. p. 336. *Fries. exs.* no. 304. *Tode. f.* 123, 124. *Fl. Dan. t.* 1782, f. 1, 2. *Eng. Fl.* v. p. 238. *Curr. Linn. Trans.* xxii. t. 45, f. 33. *Fckl. exs.* no. 993.

On fir. Appin, &c.

[United States.]

Variable in colour, yellow, green, umber, pallid, &c. Sporidia ($\cdot 0002$ in.) $\cdot 005$ m.m. long.

2328. Hypocrea rufa. Fr. "Rufous Hypocrea."

CONIDIA.—Villous, white; conidia globose, dusky green.—*Trichoderma viride*, *Pers. Syn.* p. 230. *Fr. S.M.* iii. p. 215. *Grev. t.* 271. *Eng. Fl.* v. p. 323. *Tode. f.* 29. *Bull. t.* 504, f. 6. *Sow. t.* 378, f. 14. *Fckl. exs.* no. 164.

ASCOPHORE.—Fleshy, convex, irregular, rufous, internally whitish, wrinkled when dry; ostiola slightly prominent; sporidia sixteen, squarish, colourless.—*Tul. Carp.* iii. p. 30, t. iii. f. 1-10. *Fr. S.M.* ii. p. 335. *Fr. exs.* no. 303. *Fl. Dan. t.* 1781, f. 2. *Eng. Fl.* v. p. 238. *Curr. Linn. Trans.* xxii. t. 45, f. 36. *Fckl. exs.* no. 994.

On oak, &c.

[United States.]

Sporidia ($\cdot 00015$ in.) $\cdot 004$ m.m.—*Tul.*

(Fig. 371.)

2329. Hypocrea riccioidea. Berk. "Lobed Hypocrea."

Large, fleshy, deeply lobed, orange; sporidia oblong, unisep-tate.—*Berk. Outl.* p. 383. *Sphæria riccioidea*, *Bolt. t.* 182. *Ann.*

N.H. no. 95. *Sphæria parmelioides*, *Mont. Ann. Sc. Nat.* vi. t. 18, f. 4. *Acrospermum*, *Tode*, t. 2, f. 15, a. b.

On willow. Rare. Halifax.

2330. *Hypocrea vitalba.* B. & Br. "Clematis Hypocrea."

Minute, brown, convex, sublobate; perithecia ovate; sporidia biseriate, triseptate, fusiform, appendiculate, hyaline.—*B. & Br. Ann. N.H.* no. 829, t. 9, f. 8.

On *Clematis vitalba*. Batheaston.

Forming minute groups of brown, convex, sometimes slightly lobed or confluent stromata; perithecia ovate; ostiola obsolete; asci cylindrical, clavate; sporidia ('0022-0025 in.) '05-06 m.m. long ('00025 in.), '007 m.m. wide, fusiform, triseptate, hyaline, torulose, elongated at either end into a slender setiform appendage.—*B. & Br.*

2331. *Hypocrea citrina.* Fr. "Lemon-coloured Hypocrea."

Fleshy, effused, nearly plane, lemon coloured; ostiola prominent, brownish; sporidia 16, irregular, colourless.—*Fr. S.M.* ii. p. 337. *Grev. t.* 215. *Fr. exs.* no. 31. *Berk. Eng. Fl.* v. p. 238. *Berk. Outl.* p. 383. *Curr. Linn. Trans.* xxii. t. 46, f. 51. *Fckl. exs.* no. 996.

On leaves, wood, &c. Appin. [United States.]

Web-like stratum 2-5 inches broad, byssoid at the margin, especially when young, attaching itself to everything lying in its way, plane, but undulated by the subjacent substances, yellow or tawny yellow.—*Grev.*

2332. *Hypocrea delicatula.* Tul. "Delicate Hypocrea"

Perithecia in byssoid patches, delicate, and quite smooth, at first pale yellowish, at length fawn-coloured; asci straight, narrowly linear; sporidia at first cubical, but when free becoming spherical.—*Tul. Carp.* iii. p. 33, t. 4, f. 7-13. *Tul. Ann. Sc. Nat.* ser. iv. vol. xiii. p. 18. *B. & Br. Ann. N. H.* (1866), no. 1176.

Fir plantations. April. Wilts.

This extremely interesting fungus is nearly allied to *H. citrina*, of which it has the habit. It forms patches which are easily separable from the matrix, of a delicate cream-colour, studded with fawn-coloured perithecia.—*B. & Br.* Sporidia ('0001 in.) '003 m.m.—*Tul.*

2333. *Hypocrea alutacea.* Fr. "Tan-coloured Hypocrea."

Fleshy, soft; head clavate, tan-coloured, pallid, confluent with the stem; sporidia small, at first cylindrical, then didymous, with unequal cells, which afterwards separate.—*Tul. Carp.* iii. p. 35, t. iv. f. 1-6. *Cordyceps alutacea*, *Fr. S.M.* ii. p. 325. *Sow. t.* 159.

Pers. Obs. t. 2, f. 2. Fl. Dan. t. 300. Nees. f. 304. Eng. Fl. v. p. 235.

In fir woods, amongst leaves, and on furze.

[Mid. Carolina.]

Simple, 2-3 inches high, very even and brittle, at first dirty white, slightly villous, then quite smooth and even, tan-coloured, sometimes entirely white, at length tuberculated with the prominent perithecia. Head obtuse.—*Fries.*

2334. *Hypocrea farinosa.* B. & Br. "Mealy Hypocrea."

Broadly expanded, white; perithecia crowded; hyaline, farinose; asci filiform; sporidia 16, elliptic.—*B. & Br. Ann. N.H. no. 592.*

On fallen branches. Norths. On decayed *Stereum*. July. Chester.

Spreading for some inches over decayed wood, on which it forms a thin white coat; perithecia minute, subglobose, hyaline, nearly collapsed in the centre when dry, growing from a white, mealy subiculum; at first delicately cottony. Asci filiform, containing sixteen elliptic sporidia. Older individuals acquire a dull yellowish tinge.—*B. & Br.*

2335. *Hypocrea inclusa.* B. & Br. "Enclosed Hypocrea."

Subterranean, parasitic, wholly enclosed; perithecia astomous, globose, hyaline, confluent; asci linear; sporidia right, globose.—*B. & Br. Ann. N.H. no. 970, t. 17, f. 23.*

Parasitic in the flesh of *Tuber puberulum*. Sept. Bristol.

Occupying the place of the asci in the *Tuber*; perithecia globose, hyaline, confluent; asci short, linear. Sporidia ('00015-'0002 in) '0035-'005 m.m.

Gen. 336.

HYPOMYCES, Tul.

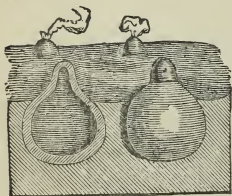


Fig. 372.

Parasitic on fungi; mycelium byssoid; perithecia small, globose, papillate; asci eight spored (rarely 2 or 4), without paraphyses; sporidia uniseriate, lanceolate or elliptic, rarely obtuse, uniseptate, ejected in tendrils.—*Tul. Carp. iii. p. 38.*

Mycelium byssoid, colourless or coloured, parasitic on fungi of various kinds. Conidia of two kinds: (1) Microconidia or Conidia

proper very copious, colourless, ovate, ellipsoid or cylindrical, simple or septate, even, aerogenous, at first catenate, fasciculate or solitary; (2) Chlamydospores often fewer, commonly much thicker, variously coloured, echinate, rarely smooth, acro or meso-genous. Perithecia small, globose, with a short rostellum or papillate, smooth or sparsely hairy, immersed in the matrix or

hyphasma, or emersed and sessile. Asci long and narrowly linear or obovate, eight spores (rarely 2-4), commonly destitute of paraphyses; spores uniseriate, lanceolate, oblong-lanceolate or elliptic, often acute, rather shortly apiculate, rarely obtuse, even, granular, mostly bilocular, and a little unequal-sided, oozing out at length, in little irregular pallid tendrils.—*Tulasne*. (Fig. 372.)

2336. *Hypomyces ochraceus*. Tul. "Ochrey *Hypomyces*."

CONIDIA.—Tufts effused, woolly, white; flocci erect, septate, pellucid; branches and branchlets subulate, patent, verticillate; conidia oblong, diaphanous, attached by an apiculus to the tips of the branchlets.—*Verticillium agaricinum*, Corda. Ic. ii. f. 68. *Botrytis agaricina*, Ditm. Sturm. t. 51. Grev. t. 126.

ASCOPHORE.—Crowded, perithecia roundish, yellowish, immersed, with a short, thick, obtuse, exserted mouth, seated upon an orange subiculum; sporidia oblong, lanceolate, uniseptate, constricted, mucronate at each extremity.—*Tul. Carp.* iii. p. 41, t. vi. f. 19, 20, t. vii. *B. & Br. Ann. N.H.* (1866), no. 1175*, t. 5, f. 35. *Hypomyces armeniacus*, Tul. Ann. Sc. Nat. (1860), xiii. p. 12. *Cryptosphaeria aurantia*, Grev. t. 78. *Curr. Linn. Trans.* t. 57, f. 6.

On decaying fungi. Near Edinburgh.

Perithecia minute, densely crowded, and appearing at first like broad, irregular, orange-yellow spots, which spread over the decaying lamellæ of Agarics, and pores of Boleti; the mouths of the perithecia protrude through a reddish-orange tomentose substance which forms a thin close web, and closely surrounds the base of the mouths, which are short and very obtuse. The perithecia, while young, are succulent, but at length become half exserted; sporidia elliptical-oblong.—*Grev.* "This is, in all probability, *Cryptomyces aurantia*, Grev. t. 78."—*B. & Br. Ann. N.H.* no. 1175*.

(Fig. 372.)

[BLASTOTRICHUM PUCCINIOIDES. Preuss. Sturm. xxv. t. 11, is a state of this or some allied species, and has occurred at Batheaston.]

2337. *Hypomyces aurantius*. Tul. "Orange *Hypomyces*."

Perithecia gregarious, subrotund, papillate, orange-red, emerging from the effused subiculum; sporidia elliptical, uniseptate?—*Tul. Carp.* iii. p. 43. *B. & Br. Ann. N.H.* (1866), p. 127. *Ann. N.H.* (1865), no. 1102. *Nectria aurantia*, Berk. Outl. p. 393. *Sph. aurantia*, Eng. Fl. v. p. 259. *Sph. aurantia*, Fr. S.M. ii. p. 440. *Pers. Ic. & Desc.* t. 11, f. 4. *Nees. f.* 362.

On *Polyporus squamosus* & *Ag. ostreatus*. Gopsal—Flintshire, &c. [Low. & Mid. Carolina.]

As there was some doubt about *Sphaeria aurantia*, Eng. Fl. being the true plant of Persoon, it was omitted in the "Outlines." It has now, however, been found in abundance in Flintshire, on *Polyporus squamosus*, and it

is inserted under the generic name proposed by Tulasne for some allied species.—*B. & Br.*

There is a very pale honey-coloured variety, springing from a snow-white subiculum, which accompanies the darker form.—*B. & Br.*

Mr. Currey's specimen on *Polyporus hispidus* probably belongs to this species. Sporidia elliptical (not acuminate or flexuous) '0005 in., *Curr. Linn. Trans. t. 57, f. 7.*

2338. *Hypomyces rosellus.* Tul. "Roseate Hypomyces."

CONIDIA.—Flocci aggregate, very much branched, white; branchlets racemose; conidia terminal, obovate-cylindrical, septate.—*Dactylium dendroides*, *Fr. S.M. iii. p. 414. Eng. Fl. v. p. 345. Tul. Carp. iii. t. v. f. 1-15. Cooke Quek. Journ. (1870), t. 4. Mucor dendroides, Bull. t. 504, f. 9. Trichothecium agaricinum, Bon. Myc. f. 114-167.*

ASCOPHORE.—Perithecia gregarious, globoso-ovate, papillate, deep rose-red, seated on a paler tomentose subiculum; sporidia short, oblong, uniseptate.—*Tul. Carp. iii. p. 45, ii. t. 30, f. 6-9. Sph. rosella, Fr. S.M. ii. p. 441. Eng. Fl. v. p. 259. Grev. t. 138. Nectria rosella, Berk. Outl. p. 393. Ann. N.H. no. 971*, t. 17, f. 24 b.*

On *Thelephora*, &c. Appin, &c.

The subiculum varies from pale to deep rose-red. Sporidia ('0005 in.) '0127 m.m., long.

HYPOMYCES CHRYSOSPERMUS, Tul. is the ascigerous, or perfect condition of which *Sepedonium chrysospermum* is the conidia. Only the latter state has yet been recorded in Britain.

2339. *Hypomyces luteo.virens.* Tul. "Greenish-yellow Hypomyces."

Effused, thin, dirty yellow, with a greenish tint; perithecia emergent, ostiola crowded, brownish; sporidia colourless, narrowly almond-shaped.—*Tul. Carp. iii. p. 57, t. viii. f. 15, 16. B. & Br. Ann. N.H. (1866), p. 128. Hypocrea luteo-virens, Fr. S.M. ii. p. 339. A. & G. t. 6, f. 8. B. & Br. Ann. N.H. no. 594, 1101*. Curr. Linn. Trans. xxii. t. 46, f. 53.*

On *Boletus*. Laxton.

[Mid. Carolina.]

Perithecia dull yellow orange colour, imbedded in a woolly subiculum, which produces yellow stylospores (*Curr l. c. f. 53 c.*); sporidia ('0008-0010 in.) '02-025 m.m.

2340. *Hypomyces Broomeianus.* Tul. "Broome's Hypomyces."

Perithecia ovate-acute, clad with a dense short wool; asci linear, sporidia linear-lanceolate, straight, uniseptate.—*Tul. Carp.*

iii. p. 108. *B. & Br. Ann. N.H.* (1866), no. 1175, t. 5, f. 34. *Hypocrea luteo-virens*, *Rabh.* no. 751. *Ann. N.H.* no. 1101*.

On *Polyporus annosus*. Nov. Batheaston.

Conidia (·0002-·0003 in.) ·005-·0076 m.m. long.

Sporidia (·0005-·0006 in.) ·0127-·015 m.m. long.

**2341. *Hypomyces lateritius*. Tul. "Brick-red
Hypomyces."**

Broadly effused, fleshy, smooth, pale brick-red; perithecia globose; ostiola punctiform; sporidia elliptico-acuminate, colourless, uniseptate.—*Tul. Carp.* iii. p. 62, ii. p. 273, t. xxx. f. 5. *Hypocrea lateritia*, *Fr. S.M.* ii. p. 338. *Eng. Fl.* v. p. 238. *Merulius helvelloides*, *Sow. t.* 402. *Curr. Linn. Trans.* xxii. t. 46, f. 47.

On fungi. Nov.

[Mid. Carolina.]

Plant of a rather thick substance, rendering the hymenium of the Agaric on which it grows, and indeed the whole plant, juicy, so that it soon becomes putrid. Perithecia irregularly immersed, at length emergent, minute; surface even, frosted with a thin white meal.—*Fries*.

Sporidia (·0006-·0007 in.) ·015-·0177 m.m.

**2342. *Hypomyces torminosus*. Tul. "Honey-coloured
Hypomyces."**

Gregarious; perithecia small, spherical, depressed, mealy, honey-coloured, papillate; papillæ darker; asci cylindrical; sporidia oblong, uniseptate.—*Tul. Carp.* iii. p. 40. *Nectria torminosa*, *Mont. Syll.* p. 225, no. 788. *Hypocrea floccosa*, *Fr. Sum. V.S.* p. 564. *B. & Br. Ann. N.H.* no. 593.

On *Lactarius torminosus*. King's Cliffe. [Low. Carolina?]

Gen. 337.

OOMYCES, B. & Br.

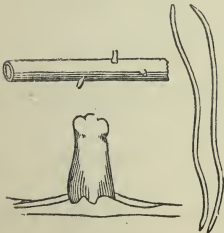


Fig. 373.

Perithecia erect, contained in a polished, coloured sac, which is free above; ostiola punctiform, apical; asci linear; sporidia filiform, very long.—*B. & Br. Ann. N.H.* no. 590.

(Fig. 373.)

2343. Oomyces-carneo-albus. *B. & Br.* "Flesh-coloured Oomyces."

Scattered, shining, pale flesh-coloured, conical, truncate above and marked with the ostiola; perithecia 3-7, vertical, closely packed in the common, tough, receptacle; asci elongated, cylindrical; sporidia filiform, extremely long, flexuous.—*B. & Br. Ann. N.H. no. 590. Sphæria carneo-alba, Lib. exs. no. 241.*

On leaves of *Aira cæspitosa*. Spyre Park.

About $\frac{2}{3}$ ds of a line high, resembling an *Acrospermum*, though differing in structure, and might easily be mistaken for the eggs of some insect. The structure is not visible until a section be made, except so far as the perithecia are indicated by the little dimples in the truncate apex.—*B. & Br. (Fig. 373.)*

Gen. 338.

NECTRIA, Fr.



Fig. 374.

Stroma definite; perithecia free, clustered or scattered, coloured (sometimes blackish), fleshy or horny; asci eight or many spored; sporidia of two kinds.—*Tul. Carp. iii. p. 65. (Fig. 374.)*

I. CÆSPITOSÆ.

2344. Nectria pulicaris. *Tul.* "Blackish Nectria."

CONIDIA.—Hemispherical, rather firm, rose-coloured; stroma convex; conidia fusiform, nearly straight, pallid.—*Fusarium roseum, Fr S.M. iii. p. 471. Eng. Fl. v. p. 355. Fckl. exs. no. 208-211. Cooke exs. no. 344.*

ASCOPHORE.—Cæspitose, irregular; stroma formed from the bark; perithecia crowded, superficial, opaque, purple, at length collapsing; sporidia biserial, colourless, elliptical or pyriform, triseptate or tripartite.—*Tul. Carp. iii. p. 68, t. xiii. f. 5-9. Gibbera pulicaris, Fr. S.M. ii. p. 417. Curr. Linn. Trans. xxii. t. 49, f. 180. Fckl. exs. no. 789. Fckl. Sym. Myc. p. 167. Berk. exs. no. 253.*

On various branches as elder, fig, willow, laburnum, &c.

[Low. & Mid. Carolina.]

The *Fusarium* forms little gregarious red dots on dead stems of mallows, &c. The sporidia measure (.0006-.001 in.) .015-.025 m.m.

Fuckel states that *Fusarium roseum* Lk. is the conidia of *Gibbera Saubinetii*; Tulasne refers it to *Nectria pulicaris*.

2345. Nectria ochracea. Fr. "Ochraceous Nectria."

Cæspitose, perithecia globose, furfuraceous, bright yellow-ochre; ostiola impressed, papillæform; sporidia?—Fr. *S.V.S.* p. 387. *Sph. ochracea* Grev. *Eng. Fl.* v. p. 252. *Fr. El.* ii. p. 79.

On dead twigs. Durham.

This most beautiful and curious species resembles very much *Nectria cinnabarina*, but is distinct both in the colour of the perithecia and stroma, which latter is at length black. Fries informs us that he has received the stroma quite naked and a true *Tubercularia*, as he believes *T. lutescens*, Link. —*Berk. in Eng. Fl.*

2346. Nectria cinnabarina. Fr. "Vermillion Nectria."

CONIDIA.—Erumpent, stratum of conidia red, margin naked.—*Tubercularia vulgaris*, *Tode. f.* 30. *Moug. exs. no.* 84. *Fr. S.M.* iii. p. 464. *Sow. t.* 294. *Bast. exs. no.* 100. *Desm. exs. no.* 170. *Rabh. exs. no.* 777. *Gard. Chron.* Jan. 28, 1871, fig. 26.

ASCOPHORE.—Cæspitose, perithecia globose, corrugated, vermillion, at length brownish; ostiola papillæform; sporidia uniseptate, frequently constricted, rather pointed at each end, colourless.—*Tul. Carp.* iii. p. 80, t. 12, t. 13, f. 14-21. *Curr. Linn. Trans.* xxii. t. 49, f. 175, 176. *Fr. S.M.* ii. p. 412. *Tode. f.* 68. *Fries. exs. no.* 184. *Moug. exs. no.* 570. *Bast. exs. no.* 26. *Cooke exs. no.* 260. *Eng. Fl.* v. p. 252. *Sph. fragiformis*, *Sow. t.* 256. *Cucurbitaria cinnabarina*, *Grev. t.* 135.

On dead twigs. Winter and Spring. Common.

[United States.]

Sporidia (.0004-.0006 in.) .01-.015 m.m.

(Fig. 374.)

2347. Nectria punicea. Schm. "Light-red Nectria."

Cæspitose, erumpent, light red; clusters subrotund; perithecia globose, even, at length collapsing and concave; sporidia uniseptate, attenuated towards each end, scarcely constricted, hyaline.—*Tul. Carp.* iii. p. 82. *Rabh. F.E. no.* 634. *Fckl. exs. no.* 984. *Cooke exs. no.* 370. *Sphæria punicea*, *Kze. Myc. H.* i. p. 61.

On twigs of *Rhamnus frangula*.

2348. Nectria coccinea. Fr. "Scarlet Nectria."

Cæspitose, perithecia ovate, even, bright red; ostiola papillæform; sporidia colourless, uniseptate, elliptical, subacuminate.—*Sch. coccinea, Fr. S.M. ii. p. 412. Eng. Fl. v. p. 253. Pers. Ic. & Des. t. 12, f. 2. Moug. exs. no. 180. Fries. exs. no. 183. Sph. mori, Sow. t. 255. Buxt. exs. no. 25. Curr. Linn. Trans. xxii. t. 49, f. 174, 175.*

On dead twigs. Common.

[United States.]

Sporidia (·0005 in.) ·0127 m.m.

2349. Nectria cucurbitula. Fr. "Orange-red Nectria."

Cæspitose; perithecia ovato-globose, even, orange-red, at length collapsed, cup-shaped, ostiola obsolete; sporidia colourless, irregularly elliptical, mixed with asci, producing minute, curved sporidia.—*Tul. Carp. iii. p. 86. Sph. cucurbitula, Fr. S.M. ii. p. 415. Tode. f. 110. Nees. f. 327. Fries. exs. no. 263. Berk. Ann. N.H. no. 174-609. Curr. Linn. Trans. xxii. t. 49, f. 178.*

On dead branches.

[Low. & Mid. Carolina.]

Easily distinguished from all similarly coloured species by its asci being filled with numerous minute curved sporidia (·0001-·0002 in.) ·0025-·005 m.m.—*B.*

2350. Nectria sinopica. Fr. "Brick-red Ivy Nectria."

Sub-cæspitose; perithecia small, globose, even, somewhat brick-red, at length collapsing and cup shaped; disc brown; ostiola papillate; asci linear; sporidia elliptic, uniseptate.—*Tul. Carp. iii. p. 89, t. xi. f. 1-10. De Not. Sfer. Ital. t. 2, f. 6. Sph. sinopica, Fr. El. ii. p. 81. Berk. Ann. N.H. no. 97. Curr. Micr. Jour. iii. p. 270. Moug. exs. no. 1335. Desm. exs. no. 1259.*

On shoots of ivy. King's Cliffe.

Each articulation of the sporidia sometimes contains a single nucleus. Perithecia when young frosted with a yellowish meal.

2351. Nectria aquifolia. Berk. "Large-spored Holly Nectria."

Cæspitose; stroma yellowish within; perithecia globose, rugulose, ambilicate from collapsing, at first brick-red, then pale, at length black; sporidia colourless, elliptical, pseudo-septate, by division of endochrome.—*Berk. Outl. p. 393. Tul. Carp. iii. p. 87, t. x. S. aquifolia, Fr. El. ii. p. 82. Eng. Fl. v. p. 253. Curr. Linn. Trans. xxii. t. 49, f. 183.*

On dead holly. Apethorpe.

Sporidia (·0005 in.) ·0127 m.m.

Tulasne unites *N. inaurata* with this species.

“Fungus octosporus simul et macrosporus, sporis saepius muticis.—*N. aquifolia*, *B.*”

Fungus polysporus et microsporus, vel octosporus cum sporis minimis et appendiculatis.—*N. inaurata*, *B.*”

2352. *Nectria inaurata*. *B. & Br.* “Small-spored Holly Nectria.”

Cæspitose; perithecia globose, then depressed, at length brown tinged with red, frosted with yellow; ostiola papillæform, at length impressed, naked, black-brown; asci and sporidia of two kinds, some clavate, with numerous small curved sporidia, others cylindrical, with eight elliptic sporidia, appendiculate at both ends.—*B. & Br. Ann. N.H. no. 781**. *Gard. Chron.* 22nd July, 1854. *Tul. Carp.* iii. p. 87.

On dead holly. Bath.

The larger asci are clavate, containing curved, minute sporidia, not exceeding (·00015 in.) ·0035 m.m. The smaller cylindrical asci contain eight elliptic, uniseptate sporidia (·0005-·0006 in.) ·0125-·015 m.m. long, furnished with a delicate, hyaline appendage at either end.

2353. *Nectria Ralfsii*. *B. & Br.* “Ralfs’s Nectria.”

Cæspitose; perithecia thick, orange, densely clothed with whitish meal, strongly collapsed when dry, mouth obscure, papillæform; asci clavate; sporidia elongated, uniseptate.—*Ann. N.H. no. 780*.

On dead branches (beech and furze).

Cæspitose. Perithecia orange, globose, but strongly collapsed, when dry covered with whitish furfuraceous scales; mouth generally obscure, sometimes minutely papillæform; asci clavate; sporidia oblong, elongated, uniseptate, with one or two nuclei in each division, varying greatly in size, from (·0006-·001 in.) ·015-·025 m.m. long. The hymenium is sometimes exposed, apparently from the splitting off of the upper portion of the perithecium.

2354. *Nectria hirta*. *Blox.* “Hairy Nectria.”

Perithecia minute, subglobose, with a slightly prominent ostium, of a pinkish-salmon colour, covered with prominent white hairs; sporidia biseriate, curved, colourless, tapering slightly at each end, multiseptate.—*Curr. Linn. Trans.* xxiv. t. 25, f. 24. *B. & Br. Ann. N.H. no. 1101*.

On decaying rails. Twycross.

A small but beautiful species, remarkable for its hairy perithecia, and the great size of its sporidia, which differ entirely from the ordinary form of fruit in *Nectria*. Sporidia (·003 in.) ·075 m.m. long.

II. BYSSISEDÆ.

2355. Nectria Albertini. *B. & Br.* "Roseate Nectria."

Perithecia gregarious, ovate, acute, papillate, rose coloured, seated on a roseate tomentose subiculum; sporidia swollen in the middle, fusiform, uniseriate.—*Ann. N.H. no. 971, t. 17, f. 24 a. Sphæria rosella, A. & S. t. 9, f. 3. Curr. Linn. Trans. xxii. t. 57, f. 3.*

On the ground, on sticks, leaves, &c. Near Bristol.

[Mid. Carolina?]

Differs most distinctly in the fruit from *Nectria rosella*, Fr. which is now included under *Hypomyces*.

III. VILLOSÆ.

2356. Nectria flavida. *Fr.* "Yellow Nectria."

Stroma floccose, delicate, yellow; perithecia subglobose, minute, orange, covered with thin yellow down; ostiola naked, rounded; sporidia elongated, fusiform, curved.—*Fr. Summ. V.S. p. 388. Sph. flavida, Corda. iv. t. 8, f. 117. B. & Br. Ann. N.H. no. 610.*

On decayed stumps. Leigh Wood, Bristol.

2357. Nectria funicola. *B. & Br.* "Rope Nectria."

Perithecia scattered, orange, ovate, attenuated upwards, clothed with scattered, short, obtuse hairs; asci clavate; sporidia oblong-elliptic, triseptate.—*B. & Br. Ann. N.H. no. 611.*

On decayed rope. Oct. King's Cliffe.

Minute, scattered; perithecia ovate, attenuated above, clothed with short obtuse, colourless hairs; orifice obtuse, without any distinct papilla; asci clavate; sporidia oblong-elliptic when seen from the back, subcymbiform when seen laterally; the endochrome is more or less perfectly divided by septa into four parts.—*B. & Br.*

IV. DENUDATÆ.

2358. Nectria peziza. *Fr.* "Cup-like Nectria."

Gregarious, soft; perithecia globose, even, sub-papillary, orange-pink, concave when collapsed; sporidia broadly elliptic, colourless, uniseptate.—*Fr. S.V.S. p. 388. Berk. Outl. p. 393, t. 24, f. 6. Sph. Pezizæ, Fr. S.M. ii. p. 452. Tode. f. 122. Moug. exs. no. 483. Fries. exs. no. 235. Sturm. t. 12. Fckl. exs. no. 982.*

Berk. exs. no. 176. Grev. t. 186, f. 2. Hoff. B.T. t. 12, f. 2. Nees. f. 361. Curr. Linn. Trans. xxii. t. 57, f. 44. Eng. Fl. v. p. 262. Peziza hydrophora, Bull. t. 410, f. 2. Sow. t. 23.

On decayed stumps. [United States.]

Sporidia (·0004-·0006 in.) ·01-·015 m.m. long.

***Nectria aurea*, Grev. t. 47.**

Messrs. Berkeley and Broome state (Ann. N.H. 1866, p. 128) that the *Sphæria aurea* of Greville is a *Nectria* allied to *N. peziza*.

2359. *Nectria platasca*. Berk. "Touchwood Nectria."

Scattered; perithecia orange, globose, confluent with the subobtuse ostiolum; base immersed; asci broad above; sporidia oblong, triseptate, quadrinucleate.—*Berk. Outl. p. 393. Sph. platasca, Eng. Fl. v. p. 263.*

On touchwood. Rockingham Forest.

Perithecia globose, but tapering above into the ostiolum, which varies somewhat in length, so as to have a slightly ovate appearance, immersed in the soft white wood, almost to the base of the ostiolum, of the same colour as *Peziza aurantia*, with now and then a few indistinct filaments; asci broad above; sporidia oblong, divided into four articulations, each containing a nucleus.—*M.J.B.*

2360. *Nectria sanguinea*. Fr. "Blood-red Nectria."

Scattered, soft, minute; perithecia ovate, papillary, blood-red; sporidia elliptical, colourless, uniseriate, uniseptate.—*Curr. Linn. Trans. xxii. t. 57, f. 45. Fr. S.V.S. p. 388. Sph. sanguinea, Fr. S.M. ii. p. 453. Eng. Fl. v. p. 263. Bolt. t. 121. Sow. t. 254. Fries. exs. no. 264. Grev. t. 175, f. 1. Baxt. exs. no. 75. Berk. exs. no. 83 (var. *cicatricum*).*

On sticks, wood, *Hypoxyla*, &c. Common. [United States.]

Sporidia (·0004-·0005 in.) ·01-·0127 m.m.

2361. *Nectria episphæria*. Fr. "Parasitic Nectria."

Gregarious, soft, very small, blood-red; perithecia somewhat compressed, collapsing; papilla convexo-oblong; sporidia colourless, elliptical, acuminate, or round at the ends, endochrome bipartite or binucleate.—*Tul. Carp. iii. p. 91. Curr. Linn. Trans. xxii. t. 57, f. 47. Sph. episphæria, Tode. f. 89. Fr. S.M. ii. p. 454. Fries. exs. no. 265. Eng. Fl. v. p. 263. Grev. t. 175, f. 2.*

On *Hypoxyla*, &c. [United States.]

Sporidia (·0002-·0004 in.) ·005-·01 m.m.

2362. *Nectria Purtoni*. *Curr.* "Purton's *Nectria*."

Gregarious ; perithecia globose, dotted, red, at length blackish, immersed at first in the receptacle ; mouth very small, submamillöse ; sporidia uniseriate, colourless, acuminate, elliptical.—*Curr. Linn. Trans.* xxii, t. 49, f. 181. *Cucurbitaria pinastri*, *Grev.* t. 50. *S. Purtoni*, *Grev.*

On *Valsa abietis*.

Sporidia (.0004 in.) .01 m.m.

Elevating the bark, which is at length ruptured by the evolution of the perithecia, which are at first included in a receptacle, but having pierced its surface, assume a globular form, and appear as if merely seated on that body, others push aside those which preceded them, and thus irregular clusters are produced. When it occurs it is in great abundance, frequently covering the smaller branches for many feet, at intervals often not exceeding the eighth of an inch.—*Grev.*

2363. *Nectria ochraceo-pallida*. *B. & Br.* "Pale-ochre *Nectria*."

Perithecia pallid-ochraceous, ovate, obtuse ; ostiola minute, papillæform ; asci clavate ; sporidia elongated, subfusiform, triseptate.—*B. & Br. Ann. N.H.* no. 607.

On elm branches. Rockingham Forest.

Gregarious, scattered or crowded, perithecia pale-ochre, with a minute papillæform orifice more or less collapsed when dry. Formerly considered as a state of *N. coccinea*, from which the clavate asci and longer sporidia distinguish it.

var. corallina. *B. & Br. Ann. N.H.* no. 779*.

On elder and elm.

Rather smaller than the paler plant, and less depressed, but little distinguishable difference in the fruit.—*B. & Br.*

2364. *Nectria muscivora*. *B. & Br.* "Moss-loving *Nectria*."

Mycelium effused, white, woolly ; perithecia crowded, orange, semi-immersed, ovate ; ostiola papillæform ; asci clavate ; sporidia shortly fusiform.—*B. & Br. Ann. N.H.* no. 608.

On mosses. King's Cliffe. [On *Jungermannia*. *S. Carolina*.]

Mycelium forming white lanose patches, 2 in. or more in diameter, and rapidly destroying the moss on which it grows. Perithecia collected in little groups, more or less connate, half immersed in the mycelium, bright orange, ovate, sometimes collapsing laterally. Sporidia elliptic, pointed at either end, with a central septum, and the endochrome in each articulation bipartite, probably triseptate when mature.

2365. *Nectria arenula.* *B. & Br.* “Pale Grass *Nectria*.”

Scattered, whitish-ochre; perithecia ovate, very shortly pedicellate; ostiola papillæform; asci clavate; sporidia oblong, subfusiform, uniseptate.—*Berk. Outl. p. 394. Sph. arenula, B. & Br. Ann. N.H. no. 622, t. 9, f. 5.*

On dead leaves of *Aira cæspitosa*. Feb. Batheaston.

Thinly scattered over the leaves. Perithecia ovate, with an obtuse papillæform ostiolum, contracted at the base, rarely obovate, and perfectly blunt. Asci sub-clavate; sporidia biseriate, oblong, slightly attenuated, rarely sub-elliptic, uniseptate.—*B. & Br.*

2366. *Nectria graminicola.* *B. & Br.* “Red-grass *Nectria*.”

Perithecia ovate, scattered, at length collapsed, red; sporidia fusiform, uniseptate.—*B. & Br. Ann. N.H. no. 897, t. 11, f. 40.*

On *Aira cæspitosa*. Jan. Batheaston.

Scattered over the dead leaves, ovate, red, at length collapsed. Sporidia fusiform (‘0007-‘0008 in.) ‘017-‘02 m.m. long. Closely resembling *N. peziza*.

2367. *Nectria Bloxami.* *B. & Br.* “Bloxam’s *Nectria*.”

Scattered, dark cinnabar-red; perithecia strongly collapsed, nearly smooth; sporidia elongated, subfusiform, quadrinucleate.—*B. & Br. Ann. N.H. no. 781.*

On dead stems of herbaceous plants. Twycross.

Sporidia (‘00065 in.) ‘016 m.m. long. Differs from *N. ochraceo-pallida*, not only in its dark cinnabar hue and collapsed perithecia, but in the far more delicate and shorter sporidia. There is sometimes a single very obscure septum.—*B. & Br.*

2368. *Nectria helminthicola.* *B. & Br.* “Black-mould *Nectria*.”

Parasitic; flesh coloured, minute, globose, smooth; asci narrowed upwards; sporidia bi-quadrinucleate.—*B. & Br. Ann. N.H. no. 896.*

Parasitic on some species of *Helminthosporium*. Jan. Batheaston.

Scarcely visible to the naked eye; asci generally attenuated upwards, often curved; sporidia hyaline, with two to four nuclei, and consequently either uniseptate, or ultimately triseptate (‘0006-‘00056 in.), about ‘015 m.m. long.—*B. & Br.*

2369. Nectria Russeliana. *Mont.* "Russel's Nectria."

CONIDIA.—Tufts small, scattered, rose coloured, at first surrounded by erect flocci; conidia fusiform, extremely minute, becoming paler by age.—*Chætostroma buxi*, *Debat. Ann. Sc. Nat.* ix. 1858. *Fusisporium buxi*, *Eng. Fl.* v. p. 352. *Berk. exs.* no. 55. *Volutella buxi*, *Berk. Outl.* p. 340. *Fckl. exs.* no. 217.

ASCOPHORE.—Small; perithecia gregarious, globose, orange-yellow, at length tawny, beset with hairs; sporidia fusiform, obtuse.—*Mont. Syll.* p. 224. *B. & Br. Ann. N.H.* no. 898. *Tul. Carp.* iii. p. 98. *Stigmatia Rousseliana*, *Fckl. Sym. Myc.* p. 97.

On box leaves. Twycross.

var. β . **viridis.** Perithecia when dry presenting nearly black specks, when moistened, green, beset with scattered hyaline hairs; sporidia elliptic ($\cdot 0007$ in.) hyaline.—*B. & Br. Ann. N.H.* no. 898.

On box leaves. Batheaston.

var. γ . **fulva.** Perithecia straw-colour or brick-red; sporidia broadly almond-shaped, $\cdot 0004$ – $\cdot 0005$.—*Sph. fulva*, *Fr. El.* ii. p. 90. *Berk. Ann. N.H.* no. 182. *Curr. Linn. Trans.* xxii. t. 57, f. 5. *Fckl. exs.* no. 207.

On box leaves. Milton, Norths.

2370. Nectria umbrina. *Fr.* "Umber Nectria."

Gregarious, ovate, obtuse, minutely papillary, umber, often pruinose at the apex; sporidia?—*Fr. S.V.S.* p. 388. *Berk. Outl.* p. 394. *Sph. umbrina*, *Berk. Eng. Fl.* v. p. 264.

On decaying bean stalks. Dec. Apethorpe.

B. Xylariei.

Stipitate—

Stroma corky, subclavate	<i>Xylaria.</i>
Stroma rather corky, discoid	<i>Poronia.</i>

Shrubby or simple—

Perithecia of substance of stem	<i>Thamnomycetes.</i>
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Sessile—

Stroma convex or plane	<i>Hypoxyylon.</i>
Stroma expanded, pulverulent	<i>Ustulina.</i>
Stroma discoid	<i>Nummularia.</i>
Stroma fused with matrix	<i>Eutypa.</i>
Stroma globose	<i>Melogramma.</i>
Stroma fleshy, epiphyllous	<i>Polystigma.</i>

Perithecia lone, nucleus immersed in the stroma	<i>Dothidea.</i>
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Gen. 339.

XYLARIA, Fr.

Stipitate; stroma corky, rarely fleshy; perithecia immersed; sporidia uniseriate, simple, ovate, dark-coloured.—*Fr. S. V. S. p.* 381. *Berk. Outl. p.* 384. *Tul. Carp. ii. p.* 4.



Fig. 375.

On old stumps. Common.

[Mid. Carolina.]

Sporidia ($\cdot 0008$ – $\cdot 0009$ in.) $\cdot 02$ – $\cdot 023$ m.m.

(Fig. 375.)

2372. Xylaria digitata. Grev. "Finger-like Xylaria."

Between fleshy and corky; cæspitose; heads cylindrical, reddish-brown, then black; tips sterile, acute; stem smooth; sporidia uniseriate, dark-brown, curved.—*Grev. Fl. Ed. p.* 356. *Berk. Outl. p.* 384. *Sph. digitata, Fr. S. M. ii. p.* 326. *Bull. t.* 220. *Schæff. t.* 265. *Hoffm. V. C. t.* 4, f. 2. *Pers. Obs. ii. t.* 2, f. 1–6. *Fl. Dan. t.* 1306. *Nees. f.* 307. *Eng. Fl. v. p.* 234. *Curr. Linn. Trans. xxii. t.* 45, f. 16.

On stumps, &c.

[Mid. Carolina.]

Stems connate at the base, whence the plant is ramoso-digitate; substance with a simple central pith; perithecia immersed, when young whitish, scarcely pulverulent, soon changing to brown.—*Fries. Sporidia* ($\cdot 0007$ in.) $\cdot 017$ m.m.

2373. Xylaria corniformis. Mont. "Horn-shaped Xylaria."

Corky, brittle, simple, cylindrical, curved, black, covered on all sides with perithecia; base subtuberous, villous; sporidia uniseriate, almond-shaped, double or plano-convex, rather dark

brown.—*Mont. Ann. Sc. Nat.* 1855, iii. p. 104. *Berk. Outl.* p. 384. *Curr. Linn. Trans.* xxii. t. 45, f. 20, 21.

On fallen branches. Lancashire. [Low. & Mid. Carolina.]

Sporidia (·0004 in.) ·01 m.m.

2374. *Xylaria hypoxylon.* Grev. "Candle-snuff *Xylaria*."

Corky, simple or branched, compressed, at first pulverulent with white meal conidia, then naked, black; stem villous; conidia small, narrowly lanceolate; sporidia uniseriate, dark brown, elliptic-acuminate, often cymbiform, with one or two nuclei.—*Grev. Fl. Ed.* p. 355. *Berk. Outl.* p. 384. t. 24, f. 1. *Tul. Carp.* ii. p. 11, t. 1, f. 1-14. *Sph. hypoxylon*, *Fr. S.M.* ii. p. 327. *Blackst.* t. 1. *Pet. Gaz.* t. 62, f. 2. *Mich.* t. 55, f. 1. *Holms.* p. 71, with fig. *Bull.* t. 180. *Batsch.* f. 160. *Hoffm. V.C.* t. 3, f. 1. *Sow.* t. 55. *Fr. exs.* no. 181. *Eng. Fl.* v. p. 235. *Bolt.* t. 129. *Moug. exs.* no. 272. *Bart. exs.* no. 74. *Dicks.* t. 12, f. 7. *Curr. Linn. Trans.* xxii. t. 45, f. 17. *Fckl. exs.* no. 1065. *Sci. Goss.* 1871, p. 77, figs. 45—47.

On stumps, &c. Common.

[United States.]

Sporidia (·0004 in.) ·01 m.m.

2375. *Xylaria carpophila.* Fr. "Beech-mast *Xylaria*."

Corky, slender, simple; head subulate, whitish pulverulent, then blackish; stem very long, root-like; conidia very minute and ovate; sporidia uniseriate, clear light brown, elliptical, or slightly reniform, with one or two nuclei.—*Fr. S.V.S.* p. 382. *Berk. Outl.* p. 384. *Tul. Carp.* ii. p. 14, t. 1, f. 15-20. *Sph. carpophila*, *Fr. S.M.* ii. p. 328. *Pers. Obs.* t. 1, f. 5. *Fries. exs.* no. 302. *Schm. exs.* no. 176. *Eng. Fl.* v. p. 235. *Fl. Dan.* t. 1858, f. 1. *Curr. Linn. Trans.* xxii. t. 45, f. 23. *Fckl. exs.* no. 1066. *Cooke exs.* no. 364.

On beech mast. Common.

[Low. & Mid. Carolina.]

Sporidia (·0004 in.) ·01 m.m.

2376. *Xylaria pedunculata.* Fr. "Stalked *Xylaria*."

Corky, slender, simple, springing from a sclerotoid base; head ovate, or subglobose; sporidia clear brown, eventually black, almond-shaped, or elliptical.—*Fr. S.V.S.* p. 382. *Berk. Outl.* p. 385. *Tul. Carp.* ii. p. 17, t. 2, f. 29, 30. *Sph. pedunculata*, *Dicks.* t. 8. *Sow.* t. 437. *Berk. exs.* no. 168. *Mag. Zool. & Bot.* no. 93, vol. ii. p. 223. *Curr. Linn. Trans.* xxv. t. 45, f. 5. *Gard. Chron.* April 15, 1871. fig.

On soil mostly attached to dung.

Sporidia ('0015-'0016 in.) '03 m.m. Before maturity surrounded by a gelatinous envelope.

2377. Xylaria bulbosa. *B. & Br.* "Bulbous Xylaria."

Corky, simple or forked, brown, then black; stem cylindrical, bulbous at the base and spongy; sporidia narrow, ovate.—*Tul. Carp.* ii. p. 20. *B. & Br. Berk. Outl.* p. 385, t. 24, f. 2. *Sphæria bulbosa*, *Pers. Obs.* ii. t. i. f. i.

Amongst fir leaves. Bath.

2378. Xylaria vaporaria. *Berk.* "Currey's Xylaria."

Stroma sclerotoid, corky, rugose, irregular, terminating at the apex in short prominences (possibly abortive receptacles); receptacles conical, stipitate, bearing perithecia only on the lower half; the upper half attenuated, subpulverulent, of a light reddish brown colour, the lower half darker; perithecia rather scattered, slightly prominent; nucleus black, glutinous; sporidia (8) almond-shaped, biseriate, black.—*Curr. Linn. Trans.* xxiv. t. 25, f. 17, 26. *B. & Br. Ann. N.H.* no. 1095.

On *Sclerotium* found in a mushroom bed. Cornwall.

"This plant was sent in a sclerotoid condition. In Dec., 1862, I planted it in damp sand, covered it with a bell-glass, and kept it moist in a warm room, in a window facing the south. The fertile branches or receptacles soon made their appearance above the surface of the sand, and by the end of March ripe fruit was produced." Sporidia ('0018-'0022 in.), '04-'055 m.m. long.—*F.C.*

Gen. **340.**

PORONIA, Fr.



Fig. 376.

Stipitate; stroma between fleshy and corky; fructifying surface discoid; perithecia immersed; sporidia ovate, simple, coloured.—*Fr. Nov. Sym. Myc.* p. 113.

(Fig. 376.)

2379. Poronia punctata. *Fr.* "Punctate Poronia."

Stipitate, turbinate, externally blackish; disc truncate, whitish, dotted with the black ostiola; conidia minute, spherical; sporidia at first brown, then black and opaque, elliptical.—*Fr. S.M.* ii. p. 330. *Berk. Outl.* p. 385. *Grev. t.* 327. *Tul. Carp.* ii. p. 27, t. iii. f. 17-18. *Sow. t.* 54. *Nees. f.* 315. *Fries. exs. no.* 182. *Eng. Fl.* v. p. 235. *Sph. truncata*, *Bolt. t.* 127, f. 2. *Bull. t.* 252. *Fl. Dan. t.* 288. *Moug. exs. no.* 958. *Curr. Linn. Trans.* xxii. t. 45, f. 27.

On horse and cow dung.

Gregarious $\frac{1}{2}$ -1 in. high, at first covered with a powdery veil, which at length vanishes and leaves the outer portion of the plant blackish, the disc being still white, but dotted with the orifices of the perithecia, which, from the depression of the cup, are often rather convergent than divergent.—*M.J.B.* Sporidia (0008-'0012 in.), '02-'03 m.m.

Gen. 341.

THAMNOMYCES, Ehr.

Stem shrubby or simple; perithecia of the same substance as the stem.

(*Fig.* 377.)

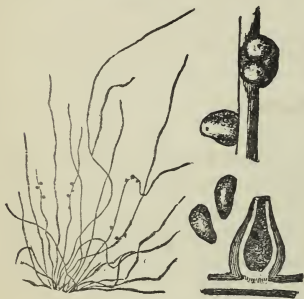


Fig. 377.

2380. Thamnomycetes hippotrichioides. *Ehrb.*
"Horsehair Thamnomycetes."

Branched, thread shaped; perithecia scattered, papillate; sporidia ovate, unequal, dark brown.—*Berk. Outl.* p. 385. *Fckl. exs.* no. 2268. *Eng. Fl.* v. p. 284. *Ehr. Hor.*

Phy. p. 82. *Sphæria hippotrichioides*, *Mag. Zool. & Bot.* no. 94. *Sow. t.* 200. *Hypox. loculiferum*, *Bull. t.* 195, f. 1. *Rhizomorpha.* *Fckl. Sym. Myc.* p. 237.

On old sacks, matting, &c.

The perithecia are either sessile or shortly pedicellate, clothed with a close indistinct tomentum, varying in shape from globose to ovate, with a distinct, very obtuse, papillæform ostium. (*Fig.* 377.)

Gen. 342.

USTULINA, Tul.



Fig. 378.

Stroma expanded, pulverulent, becoming indurated and carbonized; perithecia immersed; sporidia uniseriate, lanceolate, curved, simple, dark coloured.—*Tul. Carp.* ii. p. 23. (*Fig.* 378.)

2381. Ustulina vulgaris. *Tul.*
"Common Ustulina."

Effused, thick, undulato-rugose, when young cinereous or whitish pulverulent, at length rigid; perithecia ovate, with a short neck;

sporidia dark brown, usually somewhat curved.—*Tul. Carp.* ii. p. 23, t. iii, f. 1-6. *Hypoxyton ustulatum*, *Bull. t.* 487, f. 1. *Berk. Outl. t.* 24, f. 3. *Fckl. exs. no.* 1063. *Sph. maxima*, *Bolt. t.* 181. *Sow. t.* 338. *Tode. f.* 129. *Sph. deusta. Fr. S.M. ii. p.* 345. *Hoffm. t. i, f. 2. Eng. Fl. v. p.* 240. *Nees. f.* 316. *Fries. exs. no.* 261. *Moug. exs. no.* 276. *Mich. t.* 54, f. 1. *Grev. t.* 324, f. 2. *Curr. Linn. Trans. xxii. t.* 46, f. 57.

On rotten trunks. Common.

[United States.]

At first fleshy and pulverulent, at length naked, very brittle, 2-3 in. broad. Sporidia (·0012-·0016 in.) ·03-·04 m.m. (*Fig.* 378.)

Gen. 343.

HYPOXYLON, Fr.

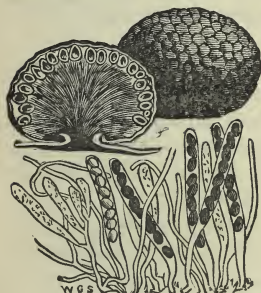


Fig. 379.

Convex or plane; stroma corky or brittle; perithecia immersed; sporidia ovate, or lanceolate, curved, unsymmetrical, simple, dark-coloured.—*Fr. S. V. S. p.* 383. *Tul. Carp. ii. p.* 30.

(*Fig.* 379.)

2382. *Hypoxyton luteum.* *Fr.* "Yellow Hypoxylon."

Orbicular, cup-shaped, black; disc marginate, rugose; stroma pulverulent, yellow; perithecia in many rows, emergent; sporidia minute, elliptical, brown, generally nucleate.—*Sph. lutea, A. & S. t. 1, f. 1. Fr. S.M. ii. p.* 347. *Berk. Ann. N.H. no.* 170. *Curr. Linn. Trans. xxii. t.* 46, f. 56.

On elder. Clifton, Notts.

Sporidia (·0002-·0003 in.) ·005-·007 m.m.

2383. *Hypoxyton succenturiatum.* *Fr.* "Tode's Hypoxylon."

Oblongo-pulvinate, immarginate, even, black, greyish-brown within; perithecia ovate, scattered, irregularly emergent; asci linear; sporidia brown, uniseriate, oblong, obtuse.—*B. & Br. Ann. N.H. no.* 830. *Sph. succenturiata. Tode, f.* 109. *Fr. S.M. ii. p.* 347.

On oak. Sept. Weybridge.

Sporidia (·0005-·0006 in.) ·0125-·015 m.m. long.

2384. Hypoxylon concentricum. Grev. "Concentric Hypoxylon."

Large, sub-globose, brownish, at length black, concentrically zoned within; perithecia oblong, immersed in the periphery; sporidia dark brown, elliptical, or irregular, sometimes with a large nucleus.—*Tul. Carp.* ii. p. 31, t. xiii. f. 11-16. *Grev. t.* 324, f. i. *Berk. Outl.* p. 386. *Curr. Linn. Trans.* xxv. t. 45, f. 32. *Sph. concentrica*, *Fr. S.M.* ii. p. 331. *Bolt. t.* 180. *Fries. exs. no.* 141. *Eng. Fl.* v. p. 236. *Nees. f.* 308. *Ehr. Hor. Bev. t.* 18, f. 8. *Fl. Dan.* 2036, f. 2. *Schæff. t.* 329. *Tode. t.* 17, f. 150. *S. fraxinea*, *Sow. t.* 160.

On old ash trees. Common. [United States.]

Often 2-3 in. broad, easily known by its zoned stroma. Sporidia ('0005 in.) '0125 m.m.

2385. Hypoxylon coccineum. Bull. "Reddish Hypoxylon."

CONIDIA.—Gregarious, fasciculate, somewhat branched, umber, branches straight, sub-tomentose.—*Isaria umbrina*, *Pers. Syn.* p. 689. *Eng. Fl.* v. p. 236. *Lycoperdon acariforme*, *Sow. t.* 146. *Institale acariforme*, *Fr. S.M.* iii. p. 210. *Rav. exs. V. no.* 82. *Anthina flavo-virens*, *Fr. S.M.* iii. p. 284.

ASCOPHORE.—Globose, vermillion-brown, bright black within; perithecia ovate; ostiola at length prominent; sporidia dark opaque brown, elliptical or arcuate.—*Bull. p.* 174, t. 495, f. 2. *Tul. Carp.* ii. p. 34, t. iv. f. 1-6. *Berk. Outl.* p. 386. *Grev. t.* 136. *Fckl. exs. no.* 1056. *S. fragiformis*, *Fr. S.M.* ii. p. 332. *Pers. Syn. t.* 1, f. 1-2. *Eng. Fl.* v. p. 236. *Ann. Bot. t.* 2, f. 5. *Nees. f.* 309. *Schm. M.H. t. i. f.* 20. *Fries. exs. no.* 41. *Moug. exs. no.* 273. *Curr. Linn. Trans.* xxv. t. 45, f. 30. *S. radians*, *Tode, f.* 101. *Lyc. variolosum*, *Sow. t.* 271.

On beech, &c. Common. [Mid. & Up. Carolina.]

Generally round, and about the size of a pea, but when growing on the trunk of a tree sometimes of considerable size and thickness, from many individuals becoming confluent; at first pale pruinose, then bright rust-coloured, bordering on vermillion, gradually becoming tuberculated, when old of a ferruginous black.—*M.J.B.*

Sporidia ('0006 in.) '015 m.m.

(Fig. 379.)

2386. Hypoxylon multifforme. Fr. "Variable Hypoxylon."

Irregular, at first rugose, rusty-brown, at length naked, black, cinereous-black within; perithecia sub-globose, at length prominent, papillate; sporidia rich yellowish-brown, elliptical, frequently slightly curved.—*Fr. S.V.S. p.* 384. *Fckl. exs. no.* 1052.

Grev. t. 114. *Berk. Outl. p.* 386, *t.* 24, *f.* 4. *H. granulosum*, *Bull. t.* 487, *f.* 2. *Sph. granulosa*, *Sow. t.* 355. *Pers. Ann. Bot. t.* 2, *f.* 1. *Sph. multiformis*, *Fr. S.M. ii. p.* 334. *Fr. Obs. i. t. i. f.* 2, 3. *Hedw. Obs. t.* 8, *f.* A. *Pers. Ic. pict. t.* 3, *f.* 1-3. *Eng. Fl. v. p.* 237. *Curr. Linn. Trans. xxv. t.* 45, *f.* 28.

On birch. Common.

[United States.]

Nothing can be more different than the spongy-looking rubiginous young plant, and the same when mature. Besides this change it often assumes many forms, sometimes elliptic, or strongly raised and crestiform, and, on the other hand sometimes quite flat and depressed. In the latter the perithecia are frequently less prominent and smaller; in every case it is firmly attached to the wood, and in branches covered with the bark erumpent.—*M.J.B. Sporidia* (·0004 in.) ·01 m.m.

2387. Hypoxylon marginatum. *Berk.* “Margined Hypoxylon.”

Hemispherical, confluent, at length black, of the same colour within, each ostiolum seated in a little margined disc; sporidia elliptical or sub-reniform, pale clear brown, sometimes with one or two nuclei.—*Berk. Outl. p.* 387. *Sph. marginata*, *Schwein. Journ. Ac. t.* 2, *f.* 8. *B. & Br. Ann. N.H. no.* 595. *Curr. Linn. Trans. xxvi. t.* 46, *f.* 60.

On decaying wood. Chatsworth.

[United States.]

The sporidia are sometimes separated by a globose cell like the connecting cells in *Anabaina*.

Sporidia (·0002 in.) ·005 m.m.

2388. Hypoxylon cohærens. *Fr.* “Confluent Hypoxylon.”

Confluent, convexo-plane, at first even, dirty-brown, then blackish, black within; perithecia at length rather prominent, papillate; sporidia rather dark brown, irregularly elliptical, frequently rather curved, often nucleate.—*Berk. Outl. p.* 387. *Fckl. exs. no.* 1053. *Sph. cohærens*, *Fr. S.M. ii. p.* 333. *Nees. f.* 310, *B. Fries. exs. no.* 45. *Schm. exs. no.* 126. *Eng. Fl. v. p.* 237. *Moug. exs. no.* 764. *Curr. Linn. Trans. xxii. t.* 45, *f.* 41.

On dead branches.

[Mid. & Up. Carolina.]

Sporidia (·0003-·0004 in.) ·0075-·01 m.m.

2389. Hypoxylon argillaceum. *Fr.* “Clay-coloured Hypoxylon.”

Subglobose, clay-coloured, brown-black within; perithecia slightly prominent, papillate; sporidia opaque, black-brown, irregularly elliptical, sometimes nucleate.—*Berk. Outl. p.* 387.

Sph. argillacea, *Fr. S.M.* ii. p. 333. *Fr. Obs.* t. 2, f. 5. *Curr. Linn. Trans.* xxii. t. 45, f. 35.

On dead ash branches.

2390. Hypoxylon fuscum. *Fr.* "Brown Hypoxylon."

Convex, pulvinate, purple-brown, or brown, at length naked, black, black-brown within; perithecia globose, ostiola umbilicate; sporidia elliptical, or almond shaped, pale brown, then very dark and opaque.—*Fr. S.V.S.* p. 384. *Tul. Carp.* ii. p. 39, t. 4, f. 7-11. *Fckl. exs.* no. 1054. *Berk. Outl.* p. 387. *Sph. fusca*, *Fr. S.M.* ii. p. 332. *Eng. Fl.* v. p. 237. *Dill. Musc.* t. 18, f. 7. *Weig.* t. 3, f. 2. *Hedw. Obs.* t. 6. *Tode* f. 100. *Pers. Ann.* t. 2, f. 3. *Nees.* f. 310. *Fries. exs.* no. 42. *Moug. exs.* no. 178. *Schm. exs.* no. 51. *Hoffm. V.C.* t. 5, f. 1. *S. tuberculosa*, *Sow.* t. 373, f. 9. *Bolt.* t. 123, f. 1. *Willd. Berl.* 7, f. 21. *Bull.* t. 468, f. 3. *Curr. Linn. Trans.* xxii. t. 45, f. 38.

On hawthorn, hazel, &c. Common. [United States.]

At first clothed with a rusty or purple brown meal, gradually increasing in thickness, at length naked, black, and pierced like a sieve. Sporidia (.0005 in.) .0125 m.m.

2391. Hypoxylon rubiginosum. *Fr.* "Rust-coloured Hypoxylon."

Broadly effused, thin, pulverulent, bright rust-coloured; perithecia rather prominent; sporidia dark brown, elliptical, slightly irregular, with one or more nuclei.—*Fr. S.V.S.* p. 384. *Fckl. exs.* no. 1051. *Berk. Outl.* p. 387. *Sph. rubiginosum*, *Fr. S.M.* ii. p. 340. *Fries. exs.* no. 142. *Eng. Fl.* v. p. 239. *Curr. Linn. Trans.* xxii. t. 45, f. 43.

On decorticated trunks. [Mid. Carolina.]

Forming longitudinally effused spots, 2-4 in. long, at first pulverulent and dirty yellow, when full grown densely covered with rust-coloured powder, at length naked and black; perithecia small, umbilicate at the apex, almost free. Sometimes the perithecia are solitary, larger, distant, and papillary; margin barren.—*Fries.*

Sporidia (.0004 in.) .01 m.m.

2392. Hypoxylon atropurpureum. *Fr.* "Purple-black Hypoxylon."

Effused, thin, flattened, purplish-black; perithecia connate, rather prominent; apex plane, papillate; sporidia dark brown, irregularly elliptical, with one or two nuclei.—*S. atropurpurea*, *Fr. S.M.* ii. p. 340. *Fries. exs.* no. 75. *Eng. Fl.* v. p. 239. *Curr. Linn. Trans.* xxii. t. 45, f. 44.

On rotten wood. Appin.

Sometimes the perithecia are scattered, or arranged in lines. Sporidia (·0004-·0005 in.) ·01-·0125 m.m.

2393. Hypoxylon serpens. Fr. "Creeping Hypoxylon."

Effused, thin, flattened, black; perithecia subglobose, rather prominent, papillate; sporidia dark brown, irregularly elliptical. *Fr. S.V.Sp.p.* 384. *Sph. serpens*, *Fr. S.M.ii.p.* 341. *Eng. Fl.v.* p. 239. *Nees.f.* 317, 318. *Fries.exs.no.* 45. *Mich.t.* 55, f. 1. *Hoffm.V.C.t.* 3, f. 1. *Fl.Dan.t.* 2037, f. 1. *Sph. crustacea*, *Sow.t.* 372, f. 11, t. 373, f. 10. *Curr. Linn. Trans. xxii.t.* 46, f. 48. *Sph. confluens*, *Fckl.exs.no.* 960.

On dead wood.

[United States.]

At first clothed with thin, cinereous, mealy down, at length naked, 2-3 in or more long. Sporidia (·0004-·0005 in.) ·01-·0125 m.m.

2394. Hypoxylon udum. Fr. "Emergent Hypoxylon."

SPERMOGONIA.—Perithecia minute; spermatea cylindrical, obtuse, somewhat curved, hyaline.

ASCOPHORE.—Short, determinate, emergent, black; perithecia sub-ovate; ostiola obtuse, unequal; sporidia almond-shaped, or oblong-elliptic, olive-green, then dark, clear, transparent brown.—*Fr. S.V.S.p.* 384. *Sph. uda*, *Fr. S.M.ii.p.* 358. *Pers. Syn.t.i.f.* 11-13. *Fries.exs.no.* 324. *Eng. Fl.v.p.* 243. *Curr. Linn. Trans. xxii.t.* 46, f. 61, 62. *Hypoxylon semi-immersum*, *Fckl.exs.no.* 2177.

On rotten branches.

[Mid. Carolina.]

Sub-elliptic, parallel, 2-3 lines long, always furnished with a circumscribing black line. Very much resembling small scattered specimens of *H. serpens*. Sporidia (·0006-·001 in.) ·015-·025 m.m.

Gen. 344. NUMMULARIA, Tul.

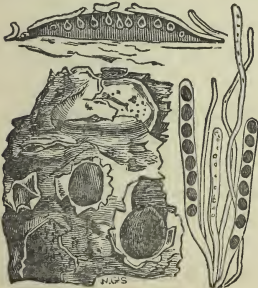


Fig. 380.

Stroma discoid. Perithecia immersed, in separate cells. Sporidia ovate or ovato-globose, straight, simple, dark-coloured, excluded in tendrils.—*Tul. Carp. ii.p.* 42. (*Fig.* 380.)

**2395. *Nummularia Bulliardi.* Tul. "Bulliard's
Nummularia."**

Determinate, quite plane, continuous, externally and internally black; perithecia immersed, ovate ostiola globose, slightly prominent; sporidia round, or elliptical, brown then black.—*Tul. Carp. ii. p. 42, t. v. f. 11-19. Hypoxylon nummularium, Curr. Linn. Trans. xxii. t. 46, f. 59. Fckl. exs. no. 1062. Bull. t. 468, f. 4. Berk. Outl. p. 386. Sph. nummularia, Fr. S.M. ii. p. 348. Eng. Fl. v. p. 240. S. macula, Tode. f. 106. S. diffusa, Sow. t. 373. Schm. M.H. t. i. f. 16. Moug. exs. no. 374.*

On wood and bark.

[United States.]

Hard, orbicular, elliptic or longitudinally effused from the confluence of one or more individuals, $\frac{1}{2}$ -2 in. broad, 1 line thick, separable from the matrix, even, very slightly papillated under a lens; ostiola distant; perithecia large, immersed.—*Fries.*

(Fig. 380.)

Sporidia (·0004-·0006 in.) ·01-·015 m.m.

Gen. 345.

EUTYPA, Tul.



Fig. 381.

Stroma fused with the matrix. Perithecia immersed, sometimes in the matrix, papillate; paraphyses few; sporidia clustered, linear and curved, or ovate and straight, simple, pale (sometimes dark coloured).—*Tul. Carp. ii. p. 52.*
(Fig. 381.)

* Sporidia hyaline.

2396. *Eutypa Acharii.* Tul. "Acharius' Eutypa."

Scattered; perithecia immersed, globose; ostiola proceeding from a black spot, minute, convex, slightly prominent, at length umbilicate; sporidia biserial, colourless, slightly curved.—*Tul. Carp. ii. p. 53. t. 7, fig. 8-20. Sphaeria eutypa, Fr. S.M. ii. p. 478. Fries. exs. no. 15, 348. Eng. Fl. v. p. 267. Curr. Linn. Trans. xxii. t. 58, f. 73. Berk. exs. no. 178. S. decomponens, Sow. t. 217. Eutypa maura, Fckl. exs. no. 1050.*

On dead branches. Common.

Very much resembling *Eutypa lata*. Sporidia (·0002-·0003 in.) ·005-·0075 m.m.
(Fig. 381.)

2397. Eutypa lata. Tul. "Broad Eutypa."

Broadly effused, emergent, unequal; perithecia close sunk in the wood, covered with a thin black stroma; ostiola slightly prominent, conical; sporidia crowded, yellowish in a mass, almost colourless when single, curved obtuse at the ends.—*Tul. Carp.* ii. p. 56. *Fckl. exs.* no. 1046. *Diatrype lata*, *Curr. Linn. Trans.* xxii. t. 47, f. 110. *S. lata*, *Fr. S.M.* ii. p. 369. *Fries exs.* no. 112. *Moug. exs.* no. 568. *Eng. Fl.* v. p. 245. *Hoffm. V.C.* i. t. 4, f. 3.

On wood, dry branches, &c. Common. [United States.]

Generally effused for some inches, but sometimes interrupted; staining the wood on which it grows dull black; rough with the slightly prominent shining ostiola.—*M.J.B.*

Sporidia (·0002-·0004 in.) ·005-·01 m.m.

2398. Eutypa flavo-virens. Tul. "Yellow-green Eutypa."

Unequal, rugose, black within, pulverulent, yellow-green; perithecia globose; ostiola rather prominent, punctiform; sporidia crowded, yellowish, curved—*Tul. Carp.* ii. p. 57, t. 7, f. 1-7. *Fckl. exs.* no. 1049. *Diatrype flavo-virens*, *Fr. S.V.S.* p. 385. *Curr. Linn. Trans.* xxii. t. 46, f. 65. *Rabh. exs.* no. 48. *S. flavo-virens*, *Fr. S.M.* ii. p. 357. *Moug. exs.* no. 375. *Fries. exs.* no. 222. *Hoffm. V.C.* i. t. 2, f. 4. *Grev. t.* 320. *Eng. Fl.* v. p. 240. *S. multiceps*, *Sow. t.* 394. f. 8. *Fckl. exs.* no. 1825. var. β .

On dead branches or naked wood.

Variable, but easily distinguished by the colour of the stroma. Sporidia (·0003 in.) ·0075 m.m.

2399. Eutypa spinosa. Tul. "Spiny Eutypa."

Very widely effused, emergent, jet black; perithecia at length connate; ostiola spinous, thick, four-sided, sulcate; sporidia almost colourless, curved, rounded or acute.—*Tul. Carp.* ii. p. 59. *Fckl. exs.* no. 1050. *Sphæria spinosa*, *Pers. Syn. t.* 2, f. 9-12. *Moug. exs.* no. 376. *Fr. S.M.* ii. p. 368. *Eng. Fl.* v. p. 244. *Fries. exs.* no. 11. *Fl. Dan. t.* 2038, f. 2. *Curr. Linn. Trans.* xxii. t. 47, f. 108.

On hard wood.

[Mid. & Up. Carolina.]

Spreading over the wood for a great space, and staining it black; when young immersed, scabrous, villous, rugose; perithecia almost free, covered with a thin crust; when old sub-emergent, remarkable for its large prominent, pyramidal, or irregular, always rugged ostiola. Perithecia ovato-globose, rather large, joined by a thin crust.—*Fries.*

Sporidia (·0003 in.) ·0075 m.m.

2400. Eutypa leioplaca. *Fr.* "Interrupted Eutypa."

Emergent, interrupted, even, black, of the same colour within ; perithecia close ; ostiola very small, at length umbilicate ; sporidia biseriate, curved, of a pale yellowish tinge.—(*Not Fckl. exs. no. 1047.*) *Diatrype leioplaca*, *Fr. S.V.S. p. 385. Curr Linn. Trans. xxii. t. 47, f. 101. S. leioplaca*, *Fr. S.M. ii. p. 370. Fries exs. no. 112. B. Eng. Fl. v. p. 245. S. immersa*, *Sow. t. 374, f. 1.*

On wood and dry branches.

[Low. Carolina.]

Distinguishable by its interrupted mode of growth more even surface, and far more minute ostiola, from *E. lata*. Sporidia ($\cdot 0004$ in.) $\cdot 01$ m.m.

2401. Eutypa scabrosa. *Fckl.* "Rough Eutypa."

CONIDIA.—Apical on brownish threads of the hyphasma, ovate, brown.—*Fckl. exs. no. 1045.*

ASCOPHORE.—Emergent or superficial, blackish ; tubercles subrotund, stipate, confluent in a broad crust ; ostiola conical, rough ; asci stipitate ; sporidia cylindrical curved, simple, pale brownish.—*Fckl. Sym. Myc. p. 215. Diatrype scabrosa*, *Fr. S.V.S. p. 385. Sph. scabrosa*, *Fr. S.M. ii. p. 360. Berk. Ann. N.H. no. 171. Fckl. exs. no. 1039. Hypoxylon scabrosum*, *Bull, t. 468, f. 5. Valsa scabrosa*, *Nke. Pyr. Germ. p. 138.*

On maple.

Seated on a broadly effused crust, at first subcontinuous, soon cracked and tuberculose ; tubercles subrotund, irregular, rather prominent.

2402. Eutypa rhodi. *Fckl.* "Rose Eutypa."

Stroma effused, maculæform, determinate, circumscribed by a black line ; perithecia small, globose or depressed ; ostiola, minute, punctiform, slightly prominent, pierced ; asci narrowly clavate, stipitate ; sporidia cylindrical curved, simple, nearly colourless, with a brownish tinge.—*Fckl. Sym. Myc. p. 213. Valsa rhodi*, *Nke. Pyr. Germ. i. p. 148.*

On *Rosa canina*. Shere. (Dr. Capron.)

Apparently quite distinct from its near allies.

* Sporidia coloured.

2403. Eutypa decipiens. *Tul.* "Deceptive Eutypa."

Effused, perithecia ovate-oblong, immersed, covered with grey-black bark ; ostiola hemispherical, rugose, hollowed out ; sporidia elliptical, variable, sometimes slightly curved, rather

dark brown.—*Tul. Carp.* ii. p. 60, t. 8, f. 1-9. *Diatrype decipiens*, *Curr. Linn. Trans.* xxii. t. 49, f. 196. *S. decipiens*, *D.C. Fl. Fr.* ii. p. 285. *Eng. Fl.* v. p. 246. *Rabh. F.E.* no. 144. *S. floriformis*, *Sow.* t. 297.

On hornbeam.

Perithecia ovate-oblong, with a rather long neck, surmounted by the beautifully radiato-rugose, more or less deeply umbilicate ostiola.—*M. J. B.* Sporidia (·0003 in.) ·0075 m.m.

2404. Eutypa elevata. B. "Many spored Eutypa."

Elongated, emergent, somewhat cracked; perithecia scattered, globose, middle-sized, with a conical neck, immersed in the wood; ostiola punctiform; asci clavate; sporidia numerous, opaque, sausage-shaped.—*Diatrype elevata*, *B. & Br. Ann. N.H.* no. 844. *Sphæria elevata*, *Berk. Hook. Jour.* (1845), p. 298. *Curr. Linn. Trans.* xxii. t. 47, f. 109.

On dead twigs of *Euonymus*. Jan. Batheaston.

Sporidia (·0003-·00035 in.) ·0075-·0085 m.m. long (*B. & Br.*), (·0006-·0007 in.) ·015-·017 m.m. (*F.C.*)

Forming elongated, raised, irregular, black, or greyish spots, $\frac{1}{2}$ line thick, $\frac{1}{2}$ -1 line long. Perithecia globose, middle-sized, with a conical neck, immersed in the wood, scattered, covered with a thin black stroma; ostiola punctiform, not very visible externally; asci clavate, containing an indefinite number of curved opaque sporidia, which are far larger than in the neighbouring species, resembling *Eutypa lata*, but distinguished by the much larger opaque sporidia which are contained in clavate asci.—*M. J. B.*

Gen. 346.

MELOGRAMMA, Tul.

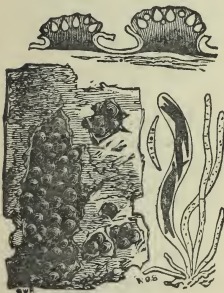


Fig. 382.

Stroma subglobose, depressed, cellular; perithecia immersed, adnate; sporidia linear, lanceolate, or ovate, plurilocular or simple.—*Tul. Carp.* ii. p. 81. *Fr. S.V.S.* p. 386. (Fig. 382.)

2405. Melogramma Bulliardii. Tul.
"Bulliard's Melogramma."

Subrotund, obconical, dingy, blackish; perithecia confluent, rather prominent; sporidia biserial, linear-lanceolate or fusiform, straight or slightly arcuate, at length quadrilocular, ultimate cells at either end hyaline.—*Tul. Carp.* ii. p. 81, t. xi. f. 1-9. *Melogramma fusisporium*, *Fr. S.V.S.* p. 386. *Berk. Outl.* p. 391. *Sph.*

fusispora, Duby. Klotzsch. exs. 1832. Bot. Zeit. (1854) p. 204. *Sph. melogramma*, Fr. S.M. ii. p. 420. Desm. exs. no. 971. Fckl. exs. no. 1033. Curr. Linn. Trans. xxii. t. 49, f. 194. Moug. exs. no. 274. *Melogramma vagans*, De Not, Micr. It. ix. t. 16. *Variolaria melogramma*, Bull. t. 492, f. 1.

On hornbeam bark.

Sporidia '04-'05 m.m. long, '004-'006 m.m. broad. ('0014-'002 in. long.—Currey.) (Fig. 382.)

2406. Melogramma homaleum. Fr.

We know of no published description of this species. The habit is very much like a *Cucurbitaria*. Asci cylindrical; sporidia uniseriate, triseptate, with an occasional transverse septum, constricted, brown.—Fr. S.V.S. p. 386. Fr. exs. no. 382. Berk. Outl. p. 391.

On dead bark.

The above description of the fruit is from a fragment of Fries. exs. no. 382, kindly furnished by the Rev. M. J. Berkeley. Sporidia ('00037 × '00012 in.) '008 × '003 m.m.

MELOGRAMMA OLIGOSPORUM, B. & Br. see *Cucurbitaria macrospora*. Tul.

2407. Melogramma rubro-notatum. B. & Br. "Brick red Melogramma."

PYCNIDIA.—Perithecia rather crowded; stylospores small, elliptical, hyaline.—*Phoma ulmicola*, Berk. Hook. Journ. v. (1853) t. 3, f. 3. Ann. N.H. xiii. (1854), no. 737.

ASCOPHORE.—Perithecia confluent; ostiola papillæform, brick-red; asci linear; sporidia oblong, triseptate.—B. & Br. Ann. N.H. no. 894. *Massaria lateritia*, Tul. Carp. ii. p. 243.

On elm bark. Dec. King's Cliffe.

At first bursting through the cuticle and forming distinct round patches, which, however, at length run together into a nearly uniform mass; perithecia confluent; ostiolum papillæform, perforated, the perforation surrounded with brick-red meal; asci linear; sporidia uniseriate, oblong ('0006 in.) '015 m.m. long, triseptate. When the red meal is rubbed off it looks as if it belonged to the tribe *Concrescentes*.—B. & Br.

2408. Melogramma gyrosum. Tul. "Orange Melogramma."

SPERMOGONIA.—Spermatia very minute, ovate-cylindrical, simple.

ASCOPHORE.—Subrotund, confluent, orange-vermilion; stroma yellowish; perithecia gyrose, pulverulent, at length slightly pro-

minent; sporidia linear-lanceolate.—*Tul. Carp.* ii. p. 87. *Endothia gyrosa*, *Fr. S.V.S.* p. 385. *Berk. Outl.* p. 384. *Sphæria gyrosa*, *Schwein. Syn. Car. Eng. Fl.* v. p. 254. *Sphæria fluens*, *Sow. t.* 438. *Sphæria radicalis*, *Rabh. exs. no.* 254.

On bark. New Forest.

[United States.]

Sporidia '0065 m.m. long, '002 m.m. broad.—*Tul.*

2409. Melogramma gastrinum. *Tul.* "Swollen Melogramma."

Ventricose, erumpent; stroma pallid; perithecia scattered irregularly; necks included; disc nearly plane, black; sporidia oblong or elliptical, at first pale-green, then dark-brown, with 1-3 nuclei.—*Tul. Carp.* ii. p. 89. *Hypoxyton gastrinum*, *Berk. Outl.* p. 386. *Sph. gastrina*, *Fr. S.M.* ii. p. 379. *S. irregularis*, *Sow. t.* 374, f. 9. *Curr. Linn. Trans.* xxii. t. 47, f. 96.

On elm. Autumn—Spring.

[Up. Carolina.]

Sporidia ('0004 in.) '01 m.m.

Gen. 347.

POLYSTIGMA, Pers.



Fig. 383.

Epiphyllous. Perithecia globose, immersed in a fleshy stroma; sporidia ovate, simple.—*Tul. Carp.* iii. p. 75. *Bon. Handb.* p. 55.

(Fig. 383.)

2410. Polystigma rubrum. Pers.
"Red Polystigma."

Hypophyllous, orbicular, bright-red, at length red-brown; cells immersed, red; ostiola subimmersed; spermatia linear, curved at the tips; asci obovate-clavate; sporidia elliptical, obtuse, straight, simple.—*D. Cand. Mem. Mus.* t. 6, f. 7.

Tul. Carp. ii. p. 76, t. viii. f. 10-20. *Fckl. Sym. Myc.* p. 222. *Cooke exs. no.* 182. *Dothidea rubra*, *Fr. S.M.* ii. p. 553. *Fries exs. no.* 191. *Eng. Fl.* v. p. 286. *Xyloma rubrum*, Pers. *Syn.* p. 103. *Purt. t.* 33. *Moug. exs. no.* 270. *Grev. t.* 120. *Bast. exs. no.* 32. *Fckl. exs. no.* 1003.

On living sloe leaves. Summer and Autumn. Common.

[Mid. Carolina.]

Spermatia '03 m.m. Sporidia '01 by '006 m.m.—*Tul.*

(Fig. 383).

2411. Polystigma fulvum. D.C. "Tawny Polystigma."

Hypophyllous, somewhat angular, tawny; cells immersed, of the same colour; ostiola immersed; spermatia and sporidia?—*DeCand. Mem. Mus. t. 6, f. 8. Tul. Carp. ii. p. 79. Fckl. Sym. Myc. p. 222. Dothidea fulva, Fr. S.M. ii. p. 554. Fries exs. no. 241. Eng. Fl. v. p. 286. Moug. exs. no. 271. Fckl. exs. no. 1826.*

On living leaves of *Prunus padus*. Scotland.

Gen. 348.

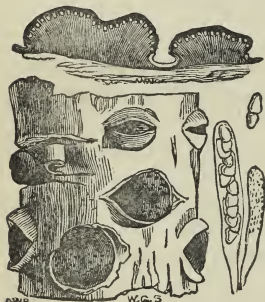
DOTHIDEA, Fr.

Fig. 384.

Perithecia none. Nucleus contained in globose cavities immersed in the stroma, with a decided neck, and papillæform ostiolum. Sporidia simple or septate.—*Fr. S.M. ii. p. 548. Tul. Carp. ii. p. 65.*

(Fig. 384.)

- Section 1. Foliicolæ.
- Section 2. Caulicolæ.
- Section 3. Lichenicolæ.

Sect. 1. Foliicolæ.**2412. Dothidea ulmi. Fr. "Elm-leaf Dothidea."**

Spermogonia.—According to some authors=*Septoria Ulmi, Fr.* (See no. 1297, ante.)

Pycnidia.—Forming small, irregularly, stellate, aggregate tubercles; stylospores broadly ovate, on short sporophores, tomiparous.—*Piggotia astroidea, B. & Br. Ann. N.H. no. 503.* (See no. 1296, ante.)

Ascophore.—Epiphyllous, roundish, confluent, convex, greyish-black, black within; cells white; ostiola granulæform; asci cylindrical, stipitate; sporidia simple, ovate-oblong, hyaline.—*Fr. S.M. ii. p. 555. Eng. Fl. v. p. 286. Grev. t. 200, f. 1. Fckl. exs. no. 1013. Cooke exs. no. 184. Berk. exs. no. 192. Sow. t. 374, f. 3. Phyllachora ulmi, Fckl. Sym. Myc. p. 218.*

On elm leaves. Common.

The asci are not matured until spring, after the leaves have laid upon the ground through the winter.

2413. *Dothidea betulina.* Fr. "Birch-leaf Dothidea."

Epiphyllous, angular, but irregular, tuberculated, shining black, black within; cells white; sporidia oblong ovate, obtuse, straight, uniseptate, very pale yellow.—*Fr. S.M. ii. p. 554. Fries exs. no. 144. Grev. t. 200, f. 2. Fckl. exs. no. 1015. Xyloma, D.C. Mem. Mus. t. 3, f. 1. Moug. exs. no. 370. Wahl. Fl. Lap. t. 30, f. 3. Phyllachora betulina, Fckl. Sym. Myc. p. 217.*

On living birch leaves.

2414. *Dothidea heraclei.* Fr. "Hog-weed Dothidea."

SPERMOGONIA.—According to some authors=*Septoria heraclei*. *Lib. exs. no. 51. Fckl. exs. no. 515.* (See no. 1298, ante.)

ASCOPHORE.—Amphigenous, confluent, angular, rugoso-tuberculate, opaque, black, within blackish; cells white; sporidia?—*Fr. S.M. ii. p. 556. Eng. Fl. v. p. 287. Fckl. exs. no. 792. Phyllachora heraclei, Fckl. Sym. Myc. p. 219.*

On living leaves of *Heracleum spondylium*.

2415. *Dothidea podagrariæ.* Fr. "Gout-weed Dothidea."

SPERMOGONIA.—According to some authors=*Septoria podagrariæ*, *Lasch. Fckl. exs. no. 514. Sept. ægopodii, Desm. exs. no. 616. Cooke exs. no. 146.* (See no. 1302 ante.)

ASCOPHORE.—Hypophyllous, simple, or connate, irregular, rather shining, black, papillate, seated on an indeterminate black crust; sporidia?—*Fr. S.M. ii. p. 556. Fries exs. no. 192. Fckl. exs. no. 1024. Phyllachora Ægopodii, Fckl. Sym. Myc. p. 218.*

On living leaves of *Ægopodium podagraria*.

2416. *Dothidea trifolii.* Fr. "Clover Dothidea."

CONIDIA.—According to some authors=*Polythrincium Trifolii*. *Kze.* (See no. 1743.)

SPERMOGONIA.—Spermatia very minute, cylindrical, curved.—*Fckl. Sym. Myc. 218. Fckl. exs. no. 1022.*

ASCOPHORE.—Covered, subrotund, rather prominent, tuberculose, rugulose, black; cells immersed in a pulverulent stroma; sporidia?—*Fr. S.M. ii. p. 435. Eng. Fl. v. p. 257. Bxt. exs. no. 84. Phyllachora trifolii, Fckl. Sym. Myc. p. 218.*

On living clover leaves. Common.

2417. Dothidea junci. Fr. "Rush Dothidea."

SPERMOGONIA.—Oblong, irregular, flat, shining; disc tawny; spermatia?—*Leptostroma juncinum*, Fr. *exs. no.* 330. *Berk. Ann. N.H. no.* 108. *Berk. exs. no.* 197.

ASCOPHORE.—Covered, at length bursting by longitudinal chinks between the fibres, tuberculated; cells in rows, black within, at first immersed in a black stroma; sporidia biseriate, yellowish-brown, linear-acuminate, triseptate.—Fr. *S.V.S. p.* 387. *Fckl. exs. no.* 1020. *Berk. exs. no.* 35. *Phyllachora junci*, *Fckl. Sym. Myc. p.* 216. *Sphæria junci*, Fr. *S.M. ii. p.* 428. *Eng. Fl. v. p.* 256. *Fries exs. no.* 5. *Moug. exs. no.* 964. *Curr. Linn. Trans. xxii. t.* 49, *f.* 199. *Cooke exs. no.* 243.

On stems of rushes. Common.

Sporidia ('0012) '03 m.m. long. According to Fuckel the sporidia are simple, uniseriate, and ovate.

2418. Dothidea graminis. Fr. "Grass Dothidea."

Covered, unequal, rugulose, rather prominent, black; cells disposed indistinctly in rows, latent, as well as the ostiola; sporidia colourless, broadly elliptical, frequently with a large globose nucleus.—Fr. *S.V.S. p.* 387. *Phyllachora graminis*, *Fckl. Sym. Myc. p.* 216. *Sph. graminis*, *Pers. Syn. p.* 30. Fr. *S.M. ii. p.* 434. *Eng. Fl. v. p.* 257. *Nees. f.* 314. *Fries. exs. no.* 282. *Moug. exs. no.* 876. *Curr. Linn. Trans. xxii. t.* 49, *f.* 211. *Fckl. exs. no.* 1018. *Cooke exs. no.* 185.

On half dead leaves of grass. Common.

2419. Dothidea caricis. Fr. "Sedge Dothidea."

Covered, unequal, confluent, black, tuberculose from the prominent cells; sporidia?—Fr. *S.V.S. p.* 387. *Sph. caricis*, Fr. *S.M. ii. p.* 435. *B. & Br. Ann. N.H. no.* 604.

On leaves of *Carices*. Forfarshire.

2420. Dothidea Johnstoni. B. & Br. "Johnston's Dothidea."

Spots minute, orbicular; cells concentric, half-free; asci short; sporidia obovate-oblong, uniseptate.—*B. & Br. Ann. N.H. no.* 661.

On leaves of *Epilobium*. Berwick.

Forming little black spots about a line broad, studded with concentric half-free cells, with a little round aperture; there are sometimes a few scattered short stiff brown hairs on the surface, occasionally converging over the orifice. Asci short, subcylindrical, generally rather thicker below; sporidia biseriate, obovato-oblong, at length pale-brown, uniseptate. Habit almost that of *Sphæria rumicis*.—*B. & Br.*

2421. Dothidea pteridis. *Fr.* "Bracken frond Dothidea."

Hypophyllous, following the veins, elongated, cinereous-black, opaque, internally black; ostiola minute, slightly prominent; asci clavate; sporidia elongated, triseptate, hyaline.—*Fr. S.M.* ii. p. 555. *Reb. t.* 1, f. 3. *Fries exs.* no. 67. *Schm. exs.* no. 2. *Cooke, Fern Book* p. 20, fig. 7-9. *Fckl. exs.* no. 1016. *Phyllachora pteridis*, *Fckl. Sym. Myc.* p. 218.

On fronds of *Pteris aquilina*.

Fuckel states that the spermogonia of this species will be found in *Fusidium pteridis*, *Rabh. F.E.* no. 389.

*Sect. 2. Caulicolæ.***2422. Dothidea tetraspora.** *B. & Br.* "Four-spored Dothidea."

Stroma pulvinate; cells immersed or subprominent; asci cylindrical, tetrasporous; sporidia uniseriate, uniseptate, obovate, constricted in the middle.—*B. & Br. Ann. N.H.* no. 899, t. 11, f. 39.

On dead twigs of *Daphne laureola* and *Ulex*. Feb. Mossburnford.

Stroma pulvinate, black, either quite even or studded with the projecting cells; asci cylindrical, containing four sporidia arranged in a single row; sporidia (001-0013 in.) 025-03 m.m. long, obovate, uniseptate, yellow-brown, the lower articulation generally shorter and narrower; very rarely there is a third septum.—*B. & Br.*

2423. Dothidea melanops. *Tul.* "Beech Dothidea."

Microstylospores spermatia-like, narrowly cylindrical, straight; macrostylospores oblong-lanceolate.

ASCOPHORE.—Rounded, irregular, plane or depressed, black, very smooth, bursting through stellate fissures in the bark. Asci large, oblong-cylindrical, very obtuse; sporidia subelliptic, a little constricted towards each end, pallid, granular or nucleate.—*Tul. Carp.* ii. p. 73, t. 10. *B. & Br. Ann. N.H.* (1866), no. 1179.

On beech. Jedburgh.

Sporidia (0008-001 in.) 025-035 m.m. long (0004-0005 in.), 013-016 m.m. broad.

2424. Dothidea ribesia. *Pers.* "Currant Dothidea."

Erumpent, subelliptic, depressed, black, of the same colour within; cells very small, white, seated near the surface; conidia

ovato-globose ; sporidia fusiform, straight, unequally two-celled.—*Tul. Carp.* ii. p. 67, t. ix. *Berk. exs.* no. 91. *Fckl. exs.* no. 1005. *Fr. S.M.* ii. p. 550. *Eng. Fl.* v. p. 285. *Fries exs.* no. 100. *Fckl. Sym. Myc.* p. 223. *Sph. ribesia*, *Pers. Syn.* p. 14. *Moug. exs.* no. 275. *Nees. f.* 312. *Stromatosphæria ribesia*, *Grev. Fl. Ed.* p. 357.

On dry branches of red currant and gooseberry. Common.
[Mid. Carolina.]

Sporidia '016-'022 m.m. long, '0065 m.m. broad.—*Tul.* (Fig. 384.)

2425. Dothidea rosæ. *Fr.* "Rose Dothidea."

Subrotund, erumpenti-innate ; stroma pale brown ; perithecia globose, somewhat immersed, stuffed with white jelly ; sporidia crowded, colourless, broadly almond-shaped.—*Fr. S.V.S.* p. 386. *Fckl. Sym. Myc.* p. 223. *Berk. exs.* no. 32. *Fckl. exs.* no. 1008. *Cooke exs.* no. 235. *Sph. Dothidea*, *Fr. S.M.* ii. p. 424. *Eng. Fl.* v. 255. *Fries. exs.* no. 308. *Moug. exs.* no. 971. *Curr. Linn. Trans.* xxii. t. 49, f. 190.

On living rose stems.

Forming irregular tubercles covered with the epidermis, which is cracked with irregular flexuous fissures. Sporidia ('0007-'0009 in.) '017-'02 m.m.

2426. Dothidea striæformis. *Fr.* "Linear Dothidea."

5 Covered with the innate blackened epidermis, at length bursting in the midst, lanceolate, short, acute ; perithecia in rows, mouthless ; sporidia ?—*Fr. S.V.S.* p. 386. *Sph. striæformis*, *Fr. S.M.* ii. p. 428. *Fries. exs.* no. 195. *Eng. Fl.* v. p. 256.

On dead herbaceous stems.

2427. Dothidea filicina. *Fr.* "Bracken Dothidea."

SPERMOGONIA.—Elongated, irregular, even, black, marked when perfect with an elevated longitudinal rib, at length separating entirely at the base ; spermatia ?—*Leptostroma filicinum*, *Fr. Obs.* i. p. 197. *Eng. Fl.* v. p. 297. *Moug. exs.* no. 476. *Cooke exs.* no. 334. *Sphæria pteridis*, *Sow. t.* 394, f. 10.

ASCOPHORE.—Subinnate, parallel, confluent, shining, black, erumpent by parallel fissures ; stroma black ; cells connate, seriate ; asci cylindrical ; sporidia elliptical, constricted, uniseptate, hyaline.—*Fr. S.V.S.* p. 386. *Cooke exs.* no. 244. *Sphæria filicina*, *Fr. S.M.* ii. p. 427. *Eng. Fl.* v. p. 255. *Berk. exs.* no. 33. *Fries. exs.* no. 48. *Schm. exs.* no. 202. *Cooke Fern Book*, p. 21, f. 8-10. *Rhopoglyphus filicinus*, *Fckl. Sym. Myc.* p. 219.

On stems of *Pteris aquilina*. Common.

According to Fuckel (*Sym. Myc. t. vi. f. 31*) the sporidia are triseptate, with a short hyaline appendage at either end.

Sect. 3. Lichenicolæ.

2428. Dothidea Piggotii. *B. & Br.* "Lichen Dothidea."

Orbicular, innate, surface papillate with the tips of the cells; asci short, clavate; sporidia biseriata, obovate or cymbiform triseptate.—*B. & Br. Ann. N.H. no. 660. Sphæria homostegia, Nyl. Flor. (1857), p. 688. Homostegia adusta, Fckl. Sym. Myc. p. 224. Fckl. exs. no. 953.*

On *Parmelia saxatilis*. Aug. Wales.

Forming little patches about a line broad completely adnate with the thallus; surface opaque, black, papillate with the protruding tips of the semi-immersed cells, whose walls are black, but separated from each other by pellucid vertical cells running down below into hyaline subhexagonal cells with thick walls. Asci short, broad, subclavate; sporidia brown, biseriata, obovate, cymbiform, slightly curved, triseptate, very rarely quadrisepate.—*B. & Br.*

Dr. Lauder Lindsay has found a *Dothidea* somewhat resembling this externally, but much smaller, on a *Parmelia*. The fruit was immature, the short asci being filled with granules. The patches were about one-third the size of those in *D. Piggotii*.

* **C. Valsei.**

Stroma determinate, verrucæform. Perithecia immersed in stroma	. . . . .	<i>Diatrype.</i>
Perithecia circinating, ending in a disc	. . . . .	<i>Valsa.</i>
Perithecia circinating. Conidia in a black mass, often oozing out	. . . . .	<i>Melanconis.</i>

Gen. 349.

DIATRYPE, Fr.

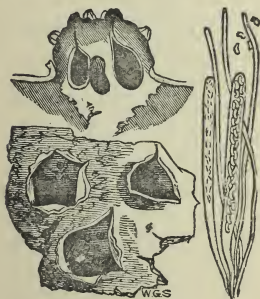


Fig. 385.

Stromadeterminate, verrucæform; perithecia immersed in the stroma; sporidia hyaline, or coloured.—*Fr. Berk. Outl. p. 387. (Fig. 385.)*

Section 1. Asci many-spored	. . . . .	<i>Diatrypella.</i>
Section 2. Asci eight-spored	. . . . .	<i>Diatrype genuina.</i>

Sect. 1. *Diatrypella*—Asci many spored.**2429. *Diatrype quercina.* Tul. “Oak Diatrype.”**

Perithecia 8-15 in a group, black; ostiola ovate, quadrisulcate; asci linear-clavate; sporidia numerous, yellowish in a mass, sausage-shaped, and colourless when free.—*Tul. Carp.* ii. p. 98, t. xii. f. 1-15 (not *B. & Br. nor Currey*). *Rabh. exs.* no. 319 and 635. *Diatrypella quercina*, *Cooke exs.* no. 242. *Sferiacei Ital.* p. 28. *Sphæria quercina*, *Pers. Syn.* p. 24, t. 1, f. 7 b. *Desm. exs.* no. 1725. *Stromatosphæria quercina*, *Grev. Fl. Ed.* p. 358. *Microstoma enteroleucum*, *Fckl. exs.* no. 1037. *Diatrypella Rouselii*, *De Not. Sfer. Ital.* t. 32. (Fig. 385.)

On oak branches. Common. [Mid. Carolina.]

2430. *Diatrype aspera.* Fr. “Rough Diatrype.”

Orbicular or angular, convex, black; perithecia attenuated into a slender neck, covered with a dirty-white stroma; ostiola conico-cylindrical; asci clavate; sporidia numerous, curved, rounded at the ends, without nuclei.—*Hoffm. Icon.* iii. t. 18, f. 3. *Fckl. exs.* no. 2057. *Fr. S.V.S.* p. 385. *S. aspera*, *Fr. S.M.* ii. p. 354. *Eng. Fl.* v. p. 242. *Diatrypella aspera*, *Fckl. Sym. Myc.* p. 232.

On branches of oak.

Very much resembling *D. verrucæformis*, but the stroma is dirty-white, the ostiola more prominent, and the neck, instead of being short, attenuated.

2431. *Diatrype favacea.* Fr. “Birch Diatrype.”

Irregular, black; perithecia oblong-ovate, with a short neck covered with the thin dirty-white stroma; ostiola rather prominent, convexo-subrotund; asci clavate; sporidia numerous, curved, rounded at the ends without nuclei.—*Fr. S.V.S.* p. 385. *Fckl. exs.* no. 1040. *S. favacea*, *Fr. Obs.* ii. t. 8, f. 5. *S.M.* ii. p. 354. *Eng. Fl.* v. p. 242. *Fries. exs.* no. 306. *Berk. Mag. Zool & Bot.* no. 17. *Diatrypella favacea*, *De Not. Schema*, 28.

On birch, yet covered with the bark. [Mid. Carolina.]

Sometimes orbicular, sometimes irregular from several individuals being confluent, prominent, 2-4 lines or more broad, at first pale wood-colour. Perithecia disposed indistinctly in two layers, their bases subconnate, apices distinct covered with a thin stroma, which in the old state is obliterated; base circumscribed by a fine black line.—*Fries.*

2432. Diatrype verrucæformis. Fr. "Warty Diatrype."

Angular, convex, rugose, black, nearly of the same colour within, circumscribed below; perithecia ovate, with a short neck; asci fusiform; sporidia numerous, crowded, yellowish in the mass, curved, rounded at the ends, usually nucleate.—Fr. *S.V.S.* p. 385. *Curr. Linn. Trans.* xxii. t. 46, f. 81. *Sph. verrucæformis.* Fr. *S.M.* ii. p. 355. *Fries. exs.* no. 74. *Moug. exs.* no. 867. *Eng. Fl.* v. p. 242. *Microstoma verrucæformis*, Fckl. *exs.* no. 1036. *S. parallela*, Sow. t. 394, f. 4. *Microstoma vulgare*, Rabh. *exs.* no. 253. *Diatrypella verrucæformis*, Fckl. *Sym. Myc.* p. 232.

On branches of hazel, beech, &c. Common.

[United States.]

Bursting through the bark by the laciniae of which it is surrounded, 1-1½ line broad, black, brownish within, the orifices of the perithecia more or less distinct.—M. J. B.

Sporidia (·0004 in.) ·01 m.m. long.

2433. Diatrype angulata. Fr. "Angular Diatrype."

Loosely circumscribed; stromacortical; perithecia few, crowded in the centre; disc plane, black; ostiola exceedingly small; asci narrowly clavate, stipitate, polysporous; sporidia, cylindrical, unicellular, curved, small, pale.—*Valsa angulata*, Fr. *S.V.S.* p. 411. *B. & Br. Ann. N.H.* no. 848.* *S. angulata*, Fr. *S.M.* ii. p. 390. *Fries. exs.* no. 72. *Eng. Fl.* v. p. 248. *Diatrypella angulata.* De Not. *Schema.* p. 28. Rabh. *F.E.* no. 1022. *Fckl. exs.* no. 2058.

On branches of beech, laburnum, birch, and lime.

In the early stage the stroma is white. Desmazières finds in *Fries. exs.* no. 72, sausage-shaped sporidia.—B. & Br.

Sect. 2. Diatrype genuina—octosporous.**A.** Sporidia sausage-shaped.**2434. Diatrype stigma.** Fr. "Effused Diatrype."

SPERMOGONIA.—Spermatia cylindrical, obtuse, slightly curved, oozing forth in reddish or orange tendrils.—*Myxosporium croceum*, Link. *Sp. Pl. Nemaspora microspora.* Desm. *Ann. Sc. Nat.* xix. (1830), p. 271. *Tul. Ann. Sc. Nat.* v. (1856), p. 117.

ASCOPHORE.—Effused, often nearly surrounding the branch, flat, even, at length black; ostiola nearly plane, sub-immersed; sporidia yellowish in the mass, almost colourless when single, slightly curved.—*Sph. stigma*, Hoffm. *V.C.i.* t. 2, f. 2. *Moug. exs.*

no. 372, 373. *Fr. S.M.* ii. p. 350. *Fries. exs.* no. 46. *Eng. Fl.* v. p. 241. *Curr. Linn. Trans.* xxii. t. 46, f. 82. *Stromatosphæria stigma*, *Grev. t.* 223, f. 2. *S. decorticans*, *Sow. t.* 137. *Stictosphæria Hoffmanni*, *Tul. Carp.* ii. p. 50, t. 6. *Cooke exs.* no. 240. *Fckl. exs.* 1043. *Eutypa leioplaca*, *Fckl. exs.* no. 1047.

On sticks. Common.

[United States.]

Many inches long, throwing off the cuticle, varying with the ostiola, sunk in a little pit, and prominent. At first brownish, then black, generally cracked transversely. Sporidia ($\cdot 0004$ in.) $\cdot 01$ m.m.

2435. Diatrype disciformis. *Fr.* "Discoid Diatrype."

Orbicular, plane, even, black, white within; perithecia attenuated into a slender neck; ostiola punctiform; sporidia biseriate or crowded, yellowish in a mass, almost colourless when detached, slightly curved.—*Fr. S.V.S. p.* 385. *Tul. Carp.* ii. p. 102. *S. disciformis*, *Hoffm. V.C. i. t.* 4, f. 1. *Moug. exs.* no. 80. *Fr. S.M.* ii. p. 353. *Cooke exs.* no. 389. *Fries exs.* no. 71. *Eng. Fl.* v. p. 241. *Curr. Linn. Trans.* xxii. t. 46, f. 64. *Stromatosphæria disciformis*, *Grev. t.* 314. *Sph. depressa*, *Sow. t.* 216.

On dry branches of beech. Common. [Mid. Carolina.]

About 2 lines broad, at first reddish, more constantly round than *D. bullata*, flat or depressed, sometimes waved, not at all convex. Perithecia more oblong. Ostiola prominent, or immersed. Sporidia ($\cdot 0002$ – $\cdot 0003$ in.) $\cdot 005$ – $\cdot 0075$ m.m.

2436. Diatrype bullata. *Fr.* "Bullate Diatrype."

Erumpent, convexo-plane, oval, or reniform, black, white within, papillated with the ostiola; sporidia crowded, cylindrical, obtuse, slightly curved.—*Fr. S.V.S. p.* 385. *Tul. Carp.* ii. p. 103. *Rabh. exs.* no. 47. *Sph. bullata*, *Hoffm. V.C. t.* 2, f. 1. *Pers. Ic. Pict. t.* 3, f. 6, 7. *Fr. S.M.* ii. p. 349. *Eng. Fl.* v. p. 241. *Fries. exs.* no. 342. *Moug. exs.* no. 866. *Sphæria placenta*, *Tode. f.* 97. *S. depressa*, *Bolt. t.* 122, f. 1. *Bull. t.* 432, f. 2?

On willow branches.

2-3 lines broad, gently convex, brownish, then black; perithecia in a single row, globose, often altered in form by mutual pressure, resting upon the matrix. Ostiola projecting slightly, often stellate. When cut off horizontally beneath the stroma a distinct black line is seen upon the wood. Sporidia ($\cdot 0002$ – $\cdot 0003$ in.) $\cdot 005$ – $\cdot 0075$ m.m.

2437. Diatrype hystrix. *Fr.* "Hedge hog Sphæria."

Bursting forth transversely, depressed, oval, rather plane, black, brownish within; rostellula distinct, somewhat incrassated above; sporidia sausage-shaped, minute.—*Fr. Summ. V.S. p.*

385. *B. & Br. Ann. N.H. no. 840 (not Currey). Sph. hystrix, Tode. f. 127. Fr. S.M. ii. p. 364. Moug. exs. no. 959. Eng. Fl. v. p. 244.*

On sycamore branches.

[Mid. Carolina.]

The pustule is brown within, but covered with a distinct black stroma. Sporidia ('0002 in.) '005 m.m. long. This is clearly not the *Valsa longirostris* of Tulasne, nor the *Diatrype (Mamiania) hystrix* of De Notaris. Berkeley regards it as the *Sphæria hystrix* of Tode. We have seen no specimens.

2438. Diatrype corniculata. *B. & Br.* "Circumscribed Diatrype."

Innate, stroma whitish; conceptaculum black; perithecia decumbent; ostiola crowded, subcylindrical, distinct, even; asci clavate, containing eight sausage-shaped sporidia.—*B. & Br. Ann. N.H. no. 845. Sph. corniculata, Ehr. exs. no. 300. Fr. S.M. ii. p. 584. Nees. f. 330. Eng. Fl. v. p. 247.*

On dead branches. Mar. Lucknam.

Sporidia ('0004-'0005 in.) '01-'0125 m.m. long, concealed beneath the epidermis, except the orifices, which are considerably exserted. Ostiola pretty constantly umbilicated.—*Grav.*

B. Sporidia uniseptate, hyaline.

2439. Diatrype varians. *Curr.* "Variable Diatrype."

Perithecia subglobose; ostiola conical, sometimes umbilicate at the apex, the masses penetrate the bark in long parallel lines; sporidia biseriate, colourless, obtuse, constricted in the centre, uniseptate, cymbiform laterally, variable in width.—*Curr. Linn. Trans. xxii. p. 270, t. 46, f. 77. B. & Br. Ann. N.H. no. 834.*

On dead twigs. June. Eltham.

The position of this species is considered doubtful. The bark in which the perithecia are immersed is scarcely at all changed. Sporidia ('0006 in.) '015 m.m.

2440. Diatrype inæqualis. *Curr.* "Unequal Diatrype."

Perithecia subglobose; ostiola short and rugose, surface of the wood blackened and rugged; sporidia greenish, obtuse, constricted in the middle, uniseptate.—*Curr. Linn. Trans. xxii. t. f. 79. Cooke. exs. no. 372. B. & Br. Ann. N.H. no. 837. Diaporthe inæqualis, Nke. Pyr. Germ. i. p. 285. Sphæria Fuckelii, Fckl. exs. no. 919.*

On furze. Jan. Weybridge.

Sporidia (.0006 in.) .015 m.m. long, uniseriate, almost colourless, but rather of a green tinge, obtuse, constricted in the middle, uniseptate, contents granular and nucleate. Perithecia sometimes scattered. The masses of perithecia surrounded by a black line.—*F.C.*

2441. *Diatrype pyrrhocystis.* B. & Br. "Brown Diatrype."

Irregular; disc plane or concave; ostiola black, punctate; stroma pallid; perithecia brown; sporidia elliptic, uniseptate, binucleate.—*B. & Br. Ann. N. H. no. 841, t. 9, f. 10. Cooke. exs. no. 241. Diaporthe pyrrhocystis, Fckl. Sym. Myc. p. 204. Dialytes decedens, Fckl exs. no. 1983.*

On hazel twigs. March.

Disc plane or concave, studded with the black shining ostiola. Asci clavate. Sporidia biseriate (.001 in.) .025 m.m. long, elliptic, obtuse, or slightly pointed, uniseptate, slightly constricted, with two large nuclei. The brown perithecia, pallid stroma, and peculiar fruit are the characteristics of this species.—*B. & Br.*

2442. *Diatrype incarcerationa.* B. & Br. "Rose Diatrype."

Immersed in the inner bark, casting off the cuticle; perithecia globose; ostiola conical, elongated; asci clavate; sporidia biseriate, oblong, acute at each end, constricted in the middle, uniseptate, quadri-nucleate.—*B. & Br. Ann. N.H. no. 842.*

On rose stems. Twycross.

Sporidia (.0005 in.) .0125 m.m. long. Fruit exactly like that of *S. enteroleuca* of Currey.

C. Sporidia multi-nucleate, or multiseptate, hyaline.

2443. *Diatrype undulata.* Fr. "Waved Diatrype."

Effused, interrupted, waved, black, white within; ostiola rather prominent, subrotund; asci linear; sporidia uniseriate, subovate, pointed at one end, at length triseptate.—*S. undulata, Pers. Syn. p. 21. Moug. exs. no. 371. Fr. S.M. ii. p. 350. Grev. t. 223, f. i. ? Eng. Fl. v. p. 241. B. & Br. Ann. N.H. no. 831. t. 9, f. 9.*

On dead branches.

Liable to be confounded with some states of *D. lata*. It may easily be distinguished by being erumpent; more commonly confounded with *D. stigma*, from which it differs in the fruit. Sporidia (.0004-.0007 in.) .01-.0177 m.m. long.

2444. *Diatrype strumella.* Fr. "Currant Diatrype."

Bursting forth transversely, depressed, elliptic, nearly plane, black; stroma cortical; ostiola cylindrical, even; sporidia bi-

seriate, colourless, elliptico-acuminate, triseptate, sometimes slightly curved and constricted.—*Fr. S.V.S. p. 385. Fckl. exs. no. 598. Curr. Linn. Trans. xxii. t. 47, f. 88. Cooke exs. no. 236. S. strumella, Fr. S.M. ii. p. 365. Fries. exs. no. 115. Moug. exs. no. 9, 60. Eng. Fl. v. p. 244. Diaporthe strumella, Fckl. Sym. Myc. p. 205.*

On dry currant branches. Common. [United States.]

Sometimes it bursts through longitudinally. Sporidia (·0005-·0006 in.) ·0127-·015 m.m. long.

2445. Diatrype nucleata. *Curr.* "Nucleate Diatrype."

Perithecia ovate or globose, with rather short ostiola, collected in elongated irregular patches, surrounded by a dark line; sporidia linear-acuminate, constricted in the centre, quadri-nucleate, colourless.—*Curr. Linn. Trans. xxii. p. 270, t. 46, f. 76. B. & Br. Ann. N. H. no. 833.*

On furze. Jan. Weybridge.

Sporidia (·0007-·0003 in.) ·0177-·02 m.m. long.

2446. Diatrype Badhami. *Curr.* "Badham's Diatrype."

Perithecia single and in masses, deeply imbedded in the wood; surface of inner bark much blackened; sporidia narrow, sub-elliptic, 3-4 nucleate, appendiculate at either end.—*Curr. Linn. Trans. xxii. t. 46, f. 80. B. & Br. Ann. N.H. no. 836.*

Sporidia (·0005-·0006 in.) ·0127-·015 m.m. long, biseriate, colourless, usually 4 nucleate, with a minute hyaline appendage at one end, which is invisible in the ascus, narrowly almond shaped. In habit and appearance resembling *D. inaequalis*.—*F.C.*

2447. Diatrype ferruginea. *Fr.* "Rusty Diatrype."

Bursting forth transversely, subrotund, unequal, black; stroma pulverulent, ferruginous; ostiola aggregate, round, spinulose; sporidia very long, linear, acuminate at the ends, colourless, with many nuclei.—*Fr. S.V.S. p. 385. Fckl. exs. no. 1038. S. ferruginea, Pers. Obs. i. t. 5, f. 1, 2. Moug. exs. no. 377. Fr. S.M. ii. p. 363. Fries. exs. no. 305. Eng. Fl. v. p. 244. Curr. Linn. Trans. xxii. t. 47, f. 94. Melogramma ferrugineum, Fckl. Sym. Myc. p. 226.*

On hazel branches. Common.

Ostiola even, very variable, sometimes almost obsolete, sometimes very long, slender, flexuous, equal, obsoletely circumscribed—*Fries.*

2448. Diatrype frangulæ. Pers. "Buckthorn Diatrype."

Perithecia not circinating, united by a distinct crust or stroma; asci somewhat clavate; sporidia biseriate or crowded, colourless, elliptic-acuminate; endochrome quadripartite, sometimes only bipartite.—*Pers. Kew. Herb. Sphæria syngenesia, Fr. (in part). Curr. Linn. Trans. xxii. t. 47, f. 119. Diatrype syngenesia, Cooke Seem. Journ. Diaporthe syngenesia, Fckl. Sym. Myc. p. 204. Valsa appendiculosa, Fckl. exs. no. 601. Cooke exs. no. 367.*

On elder and *Rhamnus frangula*.

The sporidia are only quadrinucleate until mature, each extremity is often shortly appendiculate ($\cdot 0005\text{--}\cdot 0006$ in.) $\cdot 0127\text{--}\cdot 015$ m.m. long.

D. Sporidia coloured.**2449. Diatrype dryophila.** Curr. "Dark-spored oak Diatrype."

Perithecia ovate or subglobose; stroma dirty green, necks long, convergent, piercing the bark; asci linear; sporidia uniseriate, dark, oblong, narrow, sometimes binucleate.—*Curr. Linn. Trans. xxii. p. 269, t. 46, f. 75. B. & Br. Ann. N.H. no. 832.*

On dead oak twigs.

Sporidia ($\cdot 0004\text{--}\cdot 0006$ in.) $\cdot 01\text{--}\cdot 015$ m.m. long. Perithecia surrounded by a dirty green stroma, rather deeply buried, piercing the bark by their long converging necks, forming compact, scattered black pustules. Sporidia uniseriate, narrowly elliptical, sub-acuminate at each end, at first of a pale greenish brown, then darker, eventually almost black, when young with two or more nuclei in each sporidium.—*F.C.*

2450. Diatrype denigrans. Curr. "Tubercular Diatrype."

Perithecia conical or depressed, with long ostiola, penetrating the bark, and raising the wood into minute prominent black tubercles; sporidia dark, elliptic.—*Curr. Linn. Trans. xxii. t. 46, f. 78. B. & Br. Ann. N.H. no. 835.*

On twigs.

Sporidia ($\cdot 0005$ in.) $\cdot 0127$ m.m. long, uniseriate, often partly overlapping, dark olive brown, elliptical bi-, tri-, or multi-nucleate, sometimes quite simple. Perithecia deeply set in the wood; when a tuft of them is cut transversely there is a black line round them which is very well defined.

2451. Diatrype cincta. B. & Br. "Girdled Diatrype."

Perithecia irregularly ovate, closely packed in a compact, leathery conceptaculum; ostiola bursting the bark, forming

round pustules; sporidia dark, obtuse, constricted in the middle, uniseptate.—*B. & Br. Ann. N.H.* no. 846. *Valsa cincta*, *Curr. Linn. Trans.* xxii. t. 48, f. 135.

On twigs. (*Robinia*?) March. Blackheath.

Sporidia (·0007 in.) ·0177 m.m., uniseriate, dark rich brown, obtuse, constricted in the middle, uniseptate. Under a lens the ostiola seem surrounded with a dirty olive-green stroma.

2452. *Diatrype podoides.* Fr. “Spinulose Diatrype.”

Crowded, unequal; ostiola spinulose; laterally or altogether erumpent; sporidia large, elongated, curved, 6-7 septate, pale-brown.—*Fr. S.V.S.* p. 385. *Sph. podoides*, *Pers. Syn.* p. 22. *Moug. exs.* no. 1074. *B. & Br. Ann. N.H.* no. 600. *Curr. Linn. Trans.* xxii. t. 46, f. 85.

On dead branches. Jan.

Sporidia biseriate or crowded, clear, rather pale-brown, 7-septate, with a hyaline joint at each extremity, often slightly curved (·0024-·003 in.) ·05-·07 m.m. long.—*F.C.*

E. Sporidia uncertain.

2453. *Diatrype ulicis.* Berk. “Furze Diatrype.”

Verrucæform, nearly free, black without and within; perithecia membranaceous, broad; ostiola tuberculose.—*Sph. ulicis*, *Fr. Linn. v.* p. 544. *B. & Br. Ann. N.H.* no. 599.

On furze. Penzance.

Forming warts, erumpent, prominent, free above, subrotund or unequal, crowded, somewhat confluent, surface unequal, and tuberculose with the ostiola: perithecia crowded, broad, membranaceous, irregular.

DIATRYPE FLAVO-VIRENS, *Fr.* . . . See *Eutypa.* no. 2398.

DIATRYPE ELEVATA, *B. & Br.* . . . See *Eutypa.* no. 2404.

DIATRYPE LEOPLACA, *Fr.* . . . See *Eutypa.* no. 2400.

DIATRYPE LATA, *Fr.* See *Eutypa.* no. 2397.

DIATRYPE DECIPIENS, *Fr.* See *Eutypa.* no. 2403.

DIATRYPE STIPATA, *Curr.* See *Valsa dissepta*, *Fr.*

DIATRYPE CERATOSPERMA, *Fr.* . . . See *Valsa ceratophora*, *Tul.*

DIATRYPE SORDIDA, *B. & Br.* . . . See *Valsa taleola*, *Fr.*

(*Curr. Linn. Trans.* xxv. p. 246.)

DIATRYPE SCABROSA, *Fr.* See *Eutypa.*

Gen. 350.

MELANCONIS, Tul.

Fig. 386.

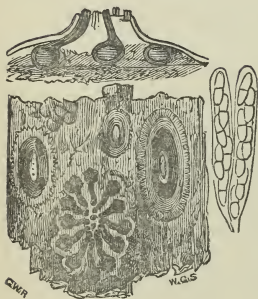


Fig. 387.

Stroma regular, orbicular or ovate, conical or pulvinate; conidia simple or multilocular, often oozing out in a black mass; spermatia shortly filiform, curved. Perithecia globose, semi-immersed, with short necks, circinating; sporidia two, or many celled, hyaline or coloured.—*Tul. Carp. ii. p. 115. (Figs. 386, 387.)*

2454. *Melanconis stilbostoma.*
Tul. "Birch Melanconis."

CONIDIA.—Stroma elevated, prominent, white; conidia compact, subglobose, olive, or olive-brown.—*Melanconium bicolor, Nees. f. 27. Corda. i. f. 33, 34. Fckl. exs. no. 84. Rabh. exs. no. 590. M. betulinum, Schm. & Kze. exs. no. 208. Fckl. exs. no. 85. Moug. exs. no. 670. Fries. exs. no. 299. M. elevatum, Corda. iii. f. 60. Didymosporium elevatum, Lk. Sp. vi. p.*

94. Fr. S.M. iii. p. 486. D. betulinum, Grev. t. 273. (Fig. 386.)

SPERMOGONIA.—Nucleus pallid; spermatia at length curved, very slender, orange.—*Nemaspora crocea, Fries. exs. no. 107. Nemaspora aurea, Rabh. exs. no. 584. Libertella betulina, Desm. Ann. Sc. Nat. xix. (1830), t. 5, f. 4.*

ASCOPHORE.—Perithecia in circles, covered with a waxy dirty-white disc; ostiola prominent, scattered, bursting forth, and at length obliterating the disc; sporidia biseriate, colourless, acuminate-elliptic, constricted, endochrome bipartite.—*Tul. Carp. ii. p. 120, t. 14, f. 1-12. Fckl. exs. no. 590. Sphæria stilbostoma (in part). Fr. S.M. ii. p. 403. Fr. exs. no. 145. Curr. Linn. Trans. xxii. t. 48, f. 140. Desm. exs. no. 757. Moug. exs. no. 962. (Fig. 387.)*

On birch.

[United States.]

2455. *Melanconis alni.* Tul. "Alder Melanconis."

CONIDIA.—Stroma elevated, latent; conidia compact, globose, or subglobose, very small, pelucid.—*Melanconium sphæroideum,*

Lk. Sp. vi. p. 92. Fr. S.M. iii. p. 488. Desm. exs. no. 140. M. apiocarpum, β. Alni, Corda. ii. f. 13. Rabb. exs. no. 469. Fckl. exs. no. 89.

ASCOPHORE.—Perithecia globose, black; asci oblong-linear; sporidia narrowly elliptical or oblong, obtuse, curved, uniseptate, scarcely constricted, with a hyaline setiform appendage at each extremity.—*Tul. Carp. ii. t. 21, f. 19, 33. Cooke exs. no. 369. Wuestneia suffusa, Fckl. exs. no. 593. Sphæria thelebola, Curr. Linn. Trans. xxii. f. 158 (not Fries).*

On alder twigs.

2456. Melanconis chrysostroma. *Tul.* "Yellow-disc Melanconis."

CONIDIA.—Conidia ovate, rounded behind, apiculate at the base, olive-brown, with 1-2 nuclei.—*Melanconium bicolor, β. Rabb. exs. no. 590. Fckl. exs. no. 90. M. microsporum, Nees. Desm. exs. no. 753.*

ASCOPHORE.—Pustulate; perithecia irregular, circinating and decumbent; ostiola scarcely exerted, pierced; disc yellow; asci elongated, clavate; sporidia elliptic, attenuated, at length uniseptate, strongly constricted.—*Tul. Carp. ii. p. 125, t. 24, f. 14-20. Valsa chrysostroma, Fr. Summ. V.S. p. 412. B. & Br. Ann. N.H. no. 861*. t. 10, f. 16. Berk. exs. no. 296. Sph. xanthostroma, Mont. Ann. S. Nat. 1834, t. 12, f. 4. Berk. Mag. Zool. & Bot. no. 22. Fries. exs. no. 444. Desm. exs. no. 1756. Curr. Linn. Trans. xxii. t. 48, f. 160.*

On hazel and hornbeam.

Perithecia small, hardly visible above the bark, but very visible when the epidermis is stripped off. Easily known by its yellow stroma. Sporidia (.0007-.0009 in.) .0177-.022 m.m. long.

2457. Melanconis Berkelæi. *Tul.* "Berkeley's Melanconis."

CONIDIA.—Ovate elliptic, or elliptic oblong, straight, obtuse, black, semi-opaque, quadrilocular (rarely 2-6 locular).—*Stilbospora macrosperma, B. & Br. Hook. Journ. Bot. iii. (1851). t. 9, 10.*

ASCOPHORE.—Perithecia circinating, or crowded; ostiola scarcely prominent, black; asci linear-oblong; sporidia uniseriate, ovate, elliptic, or elliptic-oblong, straight, quadrilocular, dark brown, hyaline at the extremity.—*Tul. Carp. ii. p. 130. Fckl. exs. no. 586. Sphæria inquinans, B. & Br. Hook. Journ. Bot. iii. (1851), t. 10. var. Ulmi (not Massaria inquinans, B. & Br.).*

On elm twigs.

Conidia and sporidia .05-.06 m.m. long, .015-.02 m.m. broad.

2458. *Melanconis lanciformis*. Tul. "Lanceolate *Melanconis*."

CONIDIA.—Pustules disc-like, flattened; conidia clavate; sporophores attenuated.—*Coryneum disciforme*, Corda. Ic. iii. f. 91. Rabh. exs. no. 278. Cooke exs. no. 351. B. & Br. Ann. N.H. no. 450.

STYLOSPORES.—Tufts solitary, black, innate, at first covered, then erumpent; stylospores black, subglobose.—*Coniothecium betulinum*, Corda. i. f. 25. B. & Br. Ann. N.H. no. 461.

PYCNIDIA.—Pustules beneath the epidermis woolly, multilocular within; stylospores large, with septate peduncles, clavate, at length deciduous, effused, oblong-elliptic, multilocular.—*Hendersonia polycystis*, B. & Br. Ann. N.H. no. 415.

ASCOPHORE.—Bursting forth transversely, lanceolate, convex, black at first cinereous within, then blackish; ostiola at length slightly prominent; sporidia biseriate, pale clear brown, flatly elliptical, rather obtuse, tips frequently pellucid.—Tul. Carp. ii. t. 16. Fckl. exs. no. 1996. *Diatrype lanciformis*, Fr. S.V.S. p. 385. *S. lanciformis*. Fr. S.M. ii. p. 362. Fries exs. no. 73. Eng. Fl. v. p. 243. Curr. Linn. Trans. xxii. t. 47, f. 91. Rabh. exs. no. 248. *S. betulina*, Sow. t. 371, f. 6.

On birch bark.

Sporidia (·002 in.) ·05 m.m. long.

It is doubtful whether *Coniothecium betulinum* and *Hendersonia polycystis* are correctly referred to this species by Mr. F. Currey. Tulasne seems to think not.

2459. *Melanconis longipes*. Tul. "Elongated *Melanconis*."

CONIDIA.—Erumpent, disciform, black; stroma placentaform, brown within; conidia fusiform, acute at each end, septate, brown, with a terminal colourless apiculus.—*Coryneum Kunzei*, Corda. Ic. iv. f. 131. Curr. Quart. Journ. Micr. Sc. v. (1857), p. 127. Rabh. exs. no. 779. Fckl. exs. no. 228. (See no. 1397, ante.)

ASCOPHORE.—Erumpent, suborbicular, convex, reddish-brown, at length black, nearly of the same colour within; ostiola rather prominent, four sided; asci clavate; sporidia lanceolate or subcymbiform; endochrome quadripartite.—Tul. Carp. ii. p. 139. Ann. Sc. Nat. ser. 4, t. v. p. iii. *Diatrype quercina*, B. & Br. Ann. N.H. no. 839. (not Tulasne or Persoon.) *S. quercina*, Fr. S.M. ii. p. 362. Eng. Fl. v. p. 243. Berk. Ann. N.H. no. 172. Curr. Linn. Trans. xxii. f. 90. *Stromatosphæria quercina*, Grev. Fl. Ed. p. 358 (in part). *Valsa arcuata*, Curr Linn. Trans. xxii. f. 167.

On oak branches.

Sporidia (·0018 in.) ·004 m.m. long.—B. & Br.

Gen. 351.

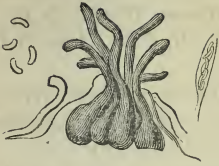
VALSA, Fr.

Fig. 388.

Perithecia carbonaceous, perfect, circinating, elongated into converging necks; ostiola erumpent, joined together, or ending in a common disc.—*Fr. S.M. Berk. Outl. p. 389. (Fig. 388.)*

Series 1. **Valsella.** Sporidia simple, hyaline.

*a. Circumscriptæ.***2460. Valsa prunastri. Fr. "Sloe Valsella."**

SPERMOGONIA.—Cells set in a depressed conceptaculum; disc erumpent, dirty brown; tendrils reddish; spermatia cylindrical, minute.—*Cytispora rubescens, Fr. S.M. ii. p. 542. Fckl. exs. no. 627. Eng. Fl. v. p. 281.*

ASCOPHORE.—Lentiform, stroma formed of the bark; ostiola elongated, crowded, 4-6 angled, sulcate, subdivergent; sporidia biseriate, almost colourless, minute, curved.—*Fr. S.V.S. p. 411. Fckl. exs. no. 596. Sphæria prunastri, Pers. Syn. p. 37. Moug. exs. no. 378. Fr. S.M. ii. p. 380. Fries. exs. no. 226. Eng. Fl. v. p. 246. Curr. Linn. Trans. xxii. p. 275. Berk. exs. no. 29. Cooke exs. no. 237.*

On branches of sloe.

[Mid. Carolina.]

Bursting forth transversely. Sporidia ($\cdot 0003$ in.) $\cdot 007$ m.m.

2461. Valsa stellulata. Fr. "Stellate Valsella."

SPERMOGONIA.—Spermatia cylindrical, curved.—*Cytispora sp. Fckl. Sym. Myc. p. 196.*

ASCOPHORE.—Subrotund, immersed; stroma white, or dirty-white, circumscribed; ostiola short, ovato-globose, radiato-stellate; asci elliptical; sporidia biseriate, very pale yellowish, simple, slightly curved, rounded at the ends.—*Fr. S.V.S. p. 411. Fckl. exs. no. 597. Sphæria stellulata, Fr. S.M. ii. p. 381. Fries. exs. no. 442. Eng. Fl. v. p. 246. Curr. Linn. Trans. xxii. t. 47, f. 120. Berk. exs. no. 79. Cooke exs. no. 382.*

On elm branches.

[United States.]

Variable as to the size of the patches, their manner of bursting through, the colour of the stroma, and length of the ostiola; sometimes the latter are crowded and pierce the epidermis in a fascicle, occasionally irregularly scattered, the patches somewhat confluent, and the whole surface of the branch pierced by a single ostiolum, which, though varying in length, are always curiously sulcate.

2462. Valsa syngenesia. Fr. "Elder Valsella."

Conical, free, adnate at the base; stroma cinereous-black; ostiola exserted; sporidia cylindrical, curved, minute, hyaline.—*Fr. Summ. V.S. p. 411. B. & Br. Ann. N.H. no. 847 (not Currey). Sph. syngenesia, Fr. Obs. ii. t. 7, f. 1. Cooke exs. no. 238.*

On elder.

[On *Rubus*, Mid. Carolina.]

Two species similar in habit, but differing in fruit, appear to have been confounded by Fries in his observations; Rev. M. J. Berkeley thinks this to be the genuine species, whilst Messrs. Currey, Nitschke, Fuckel, &c., refer it to the species included here under *Diatrype frangulæ*.

β. Incusæ.

2463. Valsa nivea. Fr. "Snowy disc Valsella."

SPERMOGONIA.—Cells set in a conceptaculum; disc erumpent, at length black; tendrils yellow; spermatia minute.—*Cytispora chrysosperma, Fr. S.M. ii. p. 542. Eng. Fl. v. p. 282. Moug. exs. 881.*

ASCOPHORE.—Conic; stroma white, contained in a close dimidiate conceptaculum, which easily separates from the bark; disc truncate, mealy, almost snow-white; ostiola slightly prominent, globose, even; asci lanceolate, sessile; sporidia cylindrical, curved, simple, hyaline.—*Fr. S.V.S. p. 411. Tul. Carp. ii. p. 128, t. 22, f. 12-21. De Not. Sfer. Ital. i. t. 36. Fckl. exs. no. 602. Sphæria nivea, Hoffm. Veg. Cr. i. p. 26, t. 6, f. 3. Moug. exs. no. 278. Eng. Fl. v. p. 248. Fr. S.M. ii. p. 386. Fries. exs. no. 76. Funck. exs. no. 281. S. marginata, Sow. t. 372, f. 7.*

var. polyspora. Sporidia numerous.—*Curr. Linn. Trans. xxii. f. 126. Valsa polyspora, Nke. Pyr. Germ. p.*

On branches of poplar, hawthorn, &c. [Mid. Carolina.]

Sporidia (·0002-·0003 in.) ·005-·007 m.m. long.

2464. Valsa leucostoma. Fr. "White-mouthed Valsella."

SPERMOGONIA.—*Cytispora nivea, Fckl. En. F.N. Cytispora ocellata, Fckl. exs. no. 1968.*

ASCOPHORE.—Somewhat conic; stroma cortical, contained in a close dimidiate conceptaculum; disc truncate, white, perforated by the black poriform ostiola; asci oblong, sessile; sporidia cylindrical, curved, simple, hyaline.—*Fr. S.V.S. p. 411. Fckl. exs. no. 603. Valsa Persoonii, Nke. Pyr. Germ. i. p. 222. S. leucostoma, Fr. S.M. ii. p. 387. Fries. exs. no. 258. Nees. f. 332. Moug. exs. no. 659. Eng. Fl. v. p. 248. Tode. f. 96. Berk. exs. no. 31.*

On branches of *Prunus*. Common. [United States.]

At first resembling a *Cytispora*, with 1-2 black included ostiola, but when perfect bearing many minute exerted, now and then slightly prominent ostiola. It differs from *V. nivea* in the nature of the disc, the obliterated stroma, and the more adnate conceptaculum.—*Fries.*

2465. Valsa Kunzei. *Fr.* “Kunze’s Larch Valsella.”

SPERMOGONIA.—*Cytispora* sp. *Fckl. Sym. Myc. p. 201.*

ASCOPHORE.—Conical; stroma pallid—yellow; disc waxy, dingy, at first pierced with a pore, then the small black ostiola, umbilicate; asci elliptical; sporidia biserial, almost colourless, curved.—*Sph. Kunzei, Fr. Kze. M.H. ii. p. 45. B. & Br. Ann. N.H. no. 601. Curr. Linn. Trans. xxii. t. 48, f. 133. Fckl. exs. no. 1728.*

On fallen branches of larch.

Orbicular, prominent; disc erumpent, truncate, dingy cinereous or olivaceous, conceptaculum scarcely a line broad, scutelliform, black, adnate to the inner bark; perithecia minute, numerous, crowded. Sporidia (.0004 in.) .01 m.m. long.

2466. Valsa microstoma. *Fr.* “Small-mouthed Valsella.”

SPERMOGONIA.—Spermatia cylindrical, curved, minute.—*Cytispora* sp. *Fckl. Sym. Myc. p. 199.*

ASCOPHORE.—Orbicular, subimmersed; disc prominent, nearly plane; ostiola very minute, globose, covered; sporidia biserial, colourless, transparent, curved, obtuse.—*Fr. S.V.S. p. 411. Curr. Linn. Trans. xxii. t. 47, f. 130. Sph. microstoma, Fries. exs. no. 185. Berk. Mag. Zool. & Bot. no. 20. Fr. S.M. ii. p. 388. Nees. f. 331. Fckl. exs. no. 1972.*

On dead sloe.

Sporidia (.0005-.0007 in.) .0127-.0177 m.m long.

2467. Valsa dissepta. *Fr.* “Variable Elm Valsella.”

SPERMOGONIA.—Spermatia almost linear, on branched septate threads.

ASCOPHORE.—Loosely circumscribed; perithecia scattered (sometimes crowded), large, saucer-shaped; ostiola erumpent, somewhat united; sporidia cylindrical, curved, obtuse.—*Diatrype stipata*, B. & Br. Ann. N.H. no. 843-970*. *S. dissecta*, Fr. S.M. ii. p. 392. *Fries. exs. no. 224. Eng. Fl. v. p. 249. S. stipata, Curr. Phil. Trans. 1857. Linn. Trans. xxii. t. 49, f. 197. Cooke exs. no. 239. S. saturnus, Sow. t. 216. Valsa hypodermia, B. & Br. Ann. N.H. no. 862, t. 10, f. 18 (not Fries). Quaternaria dissepata, Tul. Carp. iii. p. 107.*

On branches of elm, &c.

The scutellæform conceptaculum $1\frac{1}{2}$ -2 lines broad is most distinct, elliptic or slightly flexuous from the confluence of two individuals; in the centre is a single perithecium, rarely two, covered with a dingy substance with a darker, slightly prominent ostium in the centre, and a slender neck, separated from the conceptaculum by the loose wood-coloured cortical stroma.—*M. J. B. Sporidia* (·0007-·0009 in.) ·0177-·022 m.m., sometimes reaching (·001 in.) ·025 m.m. long.

2468. Valsa controversa. Fr. "Variable Valsella."

Circumscribed; stroma cortical, black; perithecia immersed; ostiola erumpent, rather prominent; asci subclavate; sporidia biseriate, hyaline, ovato-oblong, containing four nuclei.—*Fr. S.V.S. p. 411. Sph. controversa, Desm. Ann. Sc. Nat. ser. ii. vol. xvii. p. 102. Desm. exs. no. 1255. B. & Br. Ann. N.H. no. 602.*

On dead twigs of ash, *Sophora Japonica*, herbaceous stems, &c.

Varying somewhat in external appearance on different plants, a greater or less number of perithecia being collected together, and the spots of a more or less deep-black.

2469. Valsa dryina. Curr. "Brown Oak Valsella."

Perithecia pyriform, imbedded in a dirty-brown stroma; ostiola rather shorter than the perithecia, somewhat thickened towards the apex; sporidia biseriate or crowded, colourless, strongly curved; asci and sporidia very delicate and hyaline.—*Curr. Linn. Trans. xxii. t. 48, f. 135 b. B. & Br. Ann. N.H. no. 850.*

On dead oak branches. Weybridge.

Sporidia (·0003 in.) ·0076 m.m. long.

2470. Valsa concamerata. Curr. "Woolly Oak Valsella."

Perithecia raising the inner bark into a dome-shaped conceptaculum, tufts of perithecia united by white woolly fibres; spo-

ridia crowded, colourless, curved.—*Curr. Linn. Trans.* xxii. t. 48, f. 134. *B. & Br. Ann. N.H.* no. 867.

On oak.

Sporidia ('0004 in.) '01 m.m. long. Mr. Currey appears to be doubtful whether this may not be a form of *V. ceratophora*.

γ. *Obvallatæ*.

2471. Valsa coronata. *Fr.* "Coronated Valsella."

Perithecia rather irregular, disposed in a circle; ostiola even, obtuse, at first globose, crowded, at length beaked; sporidia colourless, biseriate, cylindrical, curved, simple.—*Fr. S.V.S.* p. 412. *S. coronata*, *Hoffm. V.C.* i. t. 5, f. 45. *Schm. M.H.* ii. t. i. f. 14. *Fr. S.M.* ii. p. 395. *Eng. Fl.* v. p. 249. *Klotsch. exs.* no. 543.

On oak, dog rose, and hawthorn. [Mid. & Up. Carolina.]

2472. Valsa ceratophora. *Tul.* "Horned Valsella."

SPERMOGONIA.—Spermatia, minute, simple.—*Cytispora* sp.

ASCOPHORE.—Erumpent, splitting the epidermis in a somewhat stellate manner; perithecia globose, with very long scabrous necks; asci numerous, linear-oblong, eight-spored; sporidia minute, sausage-shaped, pallid.—*Tul. Carp.* ii. p. 191, t. 22, f. 1-11. *Cooke Seem. Journ.* (1866) f. 1. *Sphæria ceratosperma*, *Moug. exs.* no. 567. *Fr. S.M.* ii. p. 364 (partly). *Curr. Linn. Trans.* xxii. p. 292, t. 47, f. 93. *Eng. Fl.* v. p. 244. *Valsa coronata*, *Duby in Rabh. exs.* (1860) no. 250. *Nke. Pyr. Germ.* p. 180. *Cooke exs.* no. 251. *Diatrype ceratosperma*, *Fr. S.V.S.* p. 411.

On branches of elm, holly, &c.

var. rosarum. Ostiola abbreviated.—*Valsa rosarum*, *De Not. Sfer. Ital.* t. 42. (Spermogonia=*Cytispora Rosæ*, *Fckl. exs.* no. 624.) *Grev. t.* 20.

On stems of rose.

var. quercicola. *Valsa decorticans*, *Fr. S.V.S.* p. 412 (in part). *Fckl. exs.* no. 606.

On oak branches.

(Fig. 388.)

2473. Valsa abietis. *Fr.* "Fir-tree Valsella."

SPERMOGONIA.—*Cytispora pini*. *Fckl. exs.* no. 628.

ASCOPHORE.—Immersed; stroma thin, dirty white; perithecia ovate, aggregate; ostiola oblong, even, thick, collected into

a disc; asci linear-oblong; sporidia biseriate, cylindrical, colourless, curved.—*Fr. S.V.S. p. 412. Fckl. exs. no. 609. Curr. Linn. Trans. xxii. t. 48. f. 147. S. abietis, Fr. S.M. ii. p. 398. Fries. exs. no. 77. Eng. Fl. v. p. 249. Cucurbitaria pinastri, Grev. t. 50.*

On branches of *Pinus abies*.

Sporidia (·0003-·0006 in.) ·0076-·015 m.m. long.

2474. Valsa aurea. *Fckl.* "Almond-spored Valsella."

Forming dark bullate spots, caused by the black perithecia nestling beneath the thin epidermis, somewhat depressed around the ostiola, which are at first covered with a bright orange disc, at length naked; perithecia from 4-6 in a group, black, with straight convergent necks, never confluent; asci cylindrical, containing eight almond-shaped, large, uniseriate, hyaline sporidia.—*Fckl. Enum. F.N. fig. 20 (1861), Nke. Pyr. Germ. p. 220. Valsa amygdalina, Cooke Seem. Journ. Bot. t. f. 21 (1866), no. 446. Cooke exs. no. 250. Valsa rutila, Tul. Carp. ii. p. 196 (1863). Wuestneia aurea, Fckl. exs. no. 587.*

On small twigs of hornbeam.

Sometimes on the same twigs as *V. bitorulosa*, from which it is distinguished with the naked eye by the dark prominent perithecia and bright orange disc.

2475. Valsa ambiens. *Fr.* "Circle Valsella."

SPERMOGONIA.—Conceptaculum none, cells black, circinating; disc dingy, tendrils pale; spermatia minute.—*Cytispora carphosperma, Fr. S.M. ii. p. 543. Eng. Fl. v. p. 282. Cytispora leucosperma, Fr. S.M. ii. p. 543. Desm. exs. no. 489.*

ASCOPHORE.—Perithecia immersed, disposed in circles; ostiola even, subglobose, surrounding a dirty-white waxy disc; sporidia colourless, 4 or 8 cylindrical, curved, obtuse, hyaline.—*Fr. S.V.S. p. 412. Tul. Carp. ii. p. 176. Fckl. exs. no. 616. Cooke exs. no. 256. Curr. Linn. Trans. xxii. t. 48, f. 138. Sphæria ambiens, Fr. S.M. ii. p. 403. Fries. exs. no. 8. Moug. exs. no. 872. Fl. Dan. t. 2039, f. 1. Eng. Fl. v. p. 250. Berk. exs. no. 80. Valsa tetraspora, Curr. Linn. Trans. xxii. t. 48, f. 148 (partly). Fckl. exs. no. 2141.*

On dead branches, especially *Rosaceæ*. Common.

[United States.]

Varying much in size, in the degree of elevation above the general surface and the colour of the disc, which is sometimes jet black.—*M.J.B.* Sporidia (·0006 in.) ·015 m.m. long.

2476. Valsa salicina. Fr. "Willow Valsella."

CONIDIA.—Pulvinate, stroma fleshy brown, lentiform, black; conidia conglutinate, suboblong, brown.—*Coniothecium amentacearum*, Corda. Ic. i. fig. 26. B. & Br. Ann. N.H. no. 460.

SPERMOGONIA.—Conceptaculum none; cells black, circinating; disc plane, dirty brown; tendrils delicate, pale; spermatia minute.—*Cytispora fugax*, Fr. S.M. ii. p. 544. Bull. t. 432, f. 5. Eng. Fl. v. p. 282. *Cytispora salicina*, Rabh. exs. no. 439. Fckl. exs. no. 623.

ASCOPHORE.—Pustulate; perithecia globose, disposed in circles; disc at length white, pierced with one or two pores; ostiola globose, very minute, at length exserted; asci tetrasporous or octosporous; sporidia cylindrical, curved, simple, hyaline.—Fr. S.V.S. p. 412. Fckl. exs. no. 615. Cooke exs. no. 377. *S. salicina*, Fr. S.M. ii. p. 401. Fries. exs. no. 10. Eng. Fl. v. p. 250. Tode. f. 107. *Valsa tetraspora*, Curr. Linn. Trans. xxii. t. 48, f. 148 (partly). Berk. Ann. N.H. no. 367. Fckl. exs. no. 614.

On willow twigs. Common.

[Mid. Carolina.]

Perithecia distinct, thin, minute, about 8 in every circle, their necks united into a minute waxy, slightly prominent disc, which is at first dingy, then white, pierced with a black pore, when it is very like *V. leucostoma*, but when perfect the disc is obliterated by the shining globose ostiola.—Fries.

2477. Valsa platanigera. B. & Br. "Small Plane Valsella."

Disc minute, whitish; perithecia few; ostiola obscure; asci clavate; sporidia lanceolate, minute.—B. & Br. Ann. N.H. no. 851, t. 9, f. 12.

On plane. Leicestershire.

Perithecia 4-7 in a group, globose, subdecumbent, neck about the same length, oblique; disc small, white; ostiola obscure; asci clavate; sporidia hyaline, lanceolate (.0007 in.) .0177 m.m. long.—B. & Br.

2478. Valsa tetraploa. B. & Curt. "Four-ribbed Valsella."

Perithecia crowded; ostiola 20-30, forming a compact tuft, sub-quadrirulcate; sporidia minute, oblong, curved.—Ann. N.H. no. 854.

On dead sticks. Feb. Elmhurst. [United States.]

Perithecia 20-30 crowded, their ostiola, which are mostly quadrirulcate, forming a little close tuft; sporidia minute, sausage-shaped.—B. & Br.

2479. *Valsa rhodophila*. B. & Br. "Rose-twigg Valsella."

Pustules minute, convex, raising the cuticle; ostiola minute, even, shining; asci clavate; sporidia cylindrical, oblong, curved. *B. & Br. Ann. N.H. no. 855.*

On dead rose twigs. Orton Wood.

Pustules minute, lifting up the cuticle, which separates from them; disc convex; ostiola minute, shining, even; asci clavate, containing eight sausage-shaped sporidia (.0004 in.) .01 m.m. long.—*B. & Br.*

2480. *Valsa quernea*. Curr. "Cluster-spored Valsella."

Perithecia?

Sporidia slightly curved, simple, linear, colourless, sub-hyaline, crowded at the apex.—*Curr. Linn. Trans. xxii. t. 48, f. 141. B. & Br. Ann. N.H. no. 856.*

On oak twigs.

Sporidia (.0002-.0003 in.) .005-.007 m.m., crowded together at the apex of the ascus, as in many *Pezizæ*.

§ *Circinatae*.**2481. *Valsa pulchella*. Fr. "Beautiful Valsella."**

SPERMOGONIA.—Perithecia conico-cylindrical, mixed with the ascophorous perithecia; spermatia linear, straight.—*Tul. Carp. ii. p. 109.*

ASCOPHORE.—Perithecia globose, decumbent, circinating; ostiola very long, flexuous, obtuse; asci obovate, linear; sporidia cylindrical, curved, simple, obtuse, hyaline.—*Fr. S.V.S. p. 412. Fckl. exs. no. 618. S. pulchella, Fr. S.M. ii. p. 406. Fries. exs. no. 146. Nees. f. 333. Moug. exs. no. 279. Eng. Fl. v. p. 251. Cryptosphæria pulchella, Grev. t. 67. Calosphæria princeps. Tul. Carp. ii. p. 109. t. 13, f. 17-22.*

On branches of birch and cherry. Chiefly in subalpine districts.
[United States.]

2482. *Valsa quaternata*. Fr. "Quaternate Valsella."

SPERMOGONIA.—Nucleus pallid; spermatia, at length curved, very slender, orange.—*Næmaspora crocea, Moug. exs. no. 177. Fckl. exs. no. 634, 635. Eng. Fl. v. p. 355.*

ASCOPHORE.—Perithecia generally grouped four together, naked, decumbent; ostiola short, obtuse, even, pierced; sporidia biseriate, almost colourless, cylindrical, curved.—*Fr. S.V.S. p.*

412. *Fckl. exs. no. 621. Curr. Linn. Trans. xxii. t. 48, f. 164, 165. Cooke. exs. no. 248. S. quaternata, Fr. S.M. ii. p. 409. Fries. exs. no. 9. Fl. Dan. t. 2039, f. 2. Moug. exs. no. 179. Pers. Syn. t. 2, f. 1, 2. Eng. Fl. v. p. 251. Quaternaria Persoonii, Tul. Carp. ii. p. 105, t. 12, f. 16-25. Fckl. Sym. Myc. p. 230, t. 2, f. 45.*

On beech branches. Common. [United States.]

Perithecia generally but not constantly quaternate, decumbent, sometimes when the epidermis is stripped off adhering to it, but occasionally left behind in the inner bark; ostiola collected together and perforating the bark by a little black, rugged, convex tubercle.—*M.J.B.*

Sporidia (·0004-·0006 in.) ·01-·015 m.m. long.

2483. Valsa hypodermia. Fr. "Crusted elm Valsella."

Circinating; perithecia globose, covered with a thin black crust; ostiola subglobose, crowded, shining; sporidia broadly fusiform, hyaline.—*S. hypodermia, Fr. S.M. ii. p. 407. Fries. exs. no. 32. Eng. Fl. v. p. 251. Berk. Mag. Zool. & Bot. no. 21. B. & Br. Ann. N.H. no. 970* (not Currey Linn. Trans. xxii. p. 280). Cryptospora hypodermia, Fckl. Sym. Myc. p. 192.*

On dead branches of Elm.

Series 2. **Tuberculostoma.** Sporidia linear or filiform.

2484. Valsa lageniformis. Curr. "Flask-shaped Valsa."

Perithecia solitary or circinating, buried in the wood, procumbent, the short ostiolum bending upwards and piercing the bark. A minute dark circle usually surrounds the ostiolum. Nucleus white; asci linear, enormously long; sporidia 6-8 filiform, the length of the ascus.—*Curr. Linn. Trans. xxiv. t. 25, f. 16. B. & Br. Ann. N.H. no. 1096. Sph. lageniformis, Sollm. Bot. Zeit. 1862, p. 380. Ostropa cubicularis, Fckl. Sym. Myc. p. 92. Lib. exs. no. 338. Tuberculostoma lageniforme, Sollm. Hedw. 1864, p. 116. Rabh. exs. no. 765. Fckl. exs. no. 2035.*

On Ash. Sept. Lewes.

2485. Valsa suffusa. Fr. "Powdered Valsa."

SPERMOGONIA.—Perithecia hemispherical, black; spermatia minute, fusiform, curved, hyaline.—*Cryptosporium Neesii, Corda. Sturm. ii. t. 51. B. & Br. Ann. N.H. no. 404. C. vulgare, Fries. S. M. iii. p. 482.*

ASCOPHORE.—Immersed, subpustulate, suffused with a yellowish powder; disc minute, pallid, bordered with black; ostiola erumpent, globose; asci broadly obovate; sporidia simple, very long, linear, obtuse, more or less arcuate.—*Fckl. exs. no. 1997. Cooke exs. no. 247. Tul. Carp. ii. p. 145. Sph. suffusa, Fr. S.M. ii. p. 399. Fries exs. no. 229. Sph. cryptosporii, Curr. Micr. Journ. iii. p. 271, Linn. Trans. xxii. t. 48, f. 144. Sph. Rabenhorstii, B. & Br. Ann. N.H. no. 631*. Valsa commutata, Fckl. exs. no. 620.*

On beech and alder twigs.

Sporidia (·00036 in.) ·008·009 m.m. long.

2486. Valsa intexta. Curr. "Interwoven Valsa."

Perithecia? Sporidia interwoven, filiform, very long.—*Curr. Linn. Trans. xxii. t. 48, f. 169. B. & Br. Ann. N.H. no. 860.*

On oak. Weybridge.

"Sporidia interwoven, generally nearly as long as the ascus, filiform and flexuous. The plant was not in a state to enable me to describe the perithecia. The paraphyses were very long and numerous, and septate. I know of no species to which it can be referred, although the sporidia somewhat resemble those of *V. suffusa, Fr.*"—*F.C.*

2487. Valsa corylina. Tul. "Hazel Valsa."

Perithecia circinating, globose, small; ostiola abbreviated, cylindrical, black; disc blackened; stroma more or less brownish, of a beautiful orange-red within; asci oblong, substipitate; sporidia fasciculate, linear, curved, hyaline, with several nuclei.—*Tul. Carp. ii. p. 174. Nke. Pyr. Germ. p. 217. Cryptospora corylina, Fckl. Sym. Myc. p. 192. Valsa conjuncta, Fckl. exs. no. 619 (not Nees).*

On hazel twigs. Shere. Dr. Capron.

Very distinct from *D. ferruginea*, with which it has been confounded. The stroma is brighter, the ostiola less prominent, and the sporidia different.

Series 3. **Valsaria.** Sporidia uniseptate, hyaline.

* Sporidia not appendiculate.

2488. Valsa extensa. Fr. "Buckthorn Valsa."

Convex, connected by an effused, ambient crust; stroma fibrous; perithecia ovate; ostiola crowded, free, oblong, even;

sporidia uniseriate, colourless, obtuse, slightly constricted, endochrome bipartite.—*Curr. Linn. Trans.* xxii. t. 47, f. 116. *S. extensa*, *Fr. Obs.* i. p. 175, t. 3, f. 2, *S.M.* ii. p. 381. *Eng. Fl.* v. p. 247.

var. b. Rhamni. Slightly adnate above with the epidermis; contents of the perithecia blackish.—*Eng. Fl.* v. p. 247.

On *Rhamnus catharticus*. Rockingham Forest.

Bursting forth transversely, the short, crowded, oblong, shining ostiola, being alone visible; when the epidermis is removed a pale mark is seen round the ostiola from a portion of the cuticle being adherent; pustules connected by a brownish black, fibrous, ambient crust. Stroma fibrous.—*M.J.B.* Is this really distinct from *Valsa fibrosa*?

2489. Valsa fibrosa. *Fr.* "Fibrous Sphæria."

Innate, conico-depressed, connected by an effused, ambient, fibrous crust; stroma fibrous; ostiola crowded, subrotund, even, shining; sporidia uniseriate, obtusely elliptical, slightly constricted, colourless; endochrome bipartite.—*Fr. S.V.S.* p. 411. *Curr. Linn. Trans.* xxii. t. 47, f. 98. *Cooke exs.* no. 254. *S. fibrosa*, *Pers. Syn.* t. 2, f. 3, 4. *Fr. S.M.* ii. p. 384. *Fries. exs.* no. 381. *Eng. Fl.* v. p. 247. *Diaporthe fibrosa*, *Fckl. Sym. Myc.* p. 204. *Wuestneia fibrosa*, *Fckl. exs.* no. 589.

On blackthorn.

[United States.]

Pustules roundish, slightly raising the epidermis and rendering it pale; when the epidermis is stripped off a pale ring is seen round the ostiola, arising from the adherence of the cuticle, connected by a brownish-black, fibrous crust; stroma fibrous; contents of the perithecia blackish.—*M.J.B.*

Sporidia ('0005 in.) '0127 m.m. long.

2490. Valsa leiphemia. *Fr.* "Common oak Valsa."

Pustulate; stroma cortical, pallid, as well as the erumpent disc; ostiola exserted, ovate, or beaked; sporidia biseriate, colourless, or very pale green, elongate acuminate, frequently slightly curved, endochrome, granular, bipartite.—*Curr. Linn. Trans.* xxii. t. 48, f. 137. *Fckl. exs.* no. 611. *Cooke exs.* no. 255. *S. leiphemia*, *Fr. S.M.* ii. p. 399. *Fries. exs.* no. 78. *Eng. Fl.* v. p. 250. *S. taleola*, *Curr. Linn. Trans.* xxii. t. 47, f. 124. *Cryptospora liphæma*, *Tul. Carp.* ii. p. 179, t. xxiii. f. 15-25.

On dead oak branches. Common. [Low. & Mid. Carolina.]

When the epidermis is stripped off the bark appears raised into round, even pustules, with a distinct, pallid, yellowish disc, entirely destitute of any conceptaculum, by which it is distinguished from *S. taleola* and others. The pustules at length acquire a blackish tinge.—*M.J.B.*

Sporidia ('0007-'0008 in.) '0177-'02 m.m. long.

2491. Valsa biconica. Curr. "Biconic Valsa."

Perithecia globose, or depressed, few together, arranged in circles, penetrating the bark with their rather short ostiola, and forming small pustules; sporidia biconical.—*Curr. Linn. Trans.* xxii. t. 48, f. 142. *B. & Br. Ann. N.H.* no. 857.

On (twigs?) Jan. Weybridge.

Sporidia biconical; endochrome granular, or oleaginous, greenish ('0011-'0012 in.) '025-'03 m.m.

2492. Valsa pulchra. Curr. "Currey's Valsa."

Perithecia (?) sporidia elliptic, greenish, slightly constricted in the middle and acuminate, uniseptate.—*Curr. Linn. Trans.* xxii. t. 48, f. 143. *B. & Br. Ann. N.H.* no. 858.

Habitat and locality unknown.

Sporidia biseriate, elliptical, but slightly constricted in the middle, and slightly acuminate at each end, uniseptate, greenish.—*F. C.*

2493. Valsa furfuracea. Fr. "Branny Valsa,"

Irregularly circinating; perithecia globose, mixed with yellow branny dust; ostiola very short, joined, obsoletely prominent; sporidia uniseriate, colourless.—*S. furfuracea, Fr. S.M.* ii. p. 409. *Eng. Fl.* v. p. 251.

On branches.

Perithecia about 12 together; their ostiola minute, black, in a small flat disc, which is not raised above the bark. Pustules on the same branch bursting the bark transversely or longitudinally, sometimes three or four are confluent, giving the plant altogether a different habit.—*M. J. B.*

2494. Valsa bitorulosa. B. & Br. "Constricted Valsa."

Perithecia brownish, sub-pulverulent; necks decumbent, straight; ostiola confluent; sporidia uniseptate, binucleate, constricted at the septum and the articulations.—*B. & Br. Ann. N. H.* no. 861, t. 10, f. 15. *Cooke exs* no. 249.

On hornbeam. Dec.

Concealed by the cuticle: perithecia globose, collapsed, circinating, about eight in a group, with straight decumbent necks and confluent ostiola; asci clavate; sporidia biseriate ('0007-'0008 in.) '0177-'02 m.m. long, uniseptate, constricted strongly at the septum and in the centre of each of the binucleate articulations. Somewhat resembles the fruit of *V. faginea*, but is larger and more constricted.—*B. & Br.*

2495. *Valsa faginea.* Curr. "Beech Valsa."

Perithecia conical; ostiola penetrating the bark, long and protruding, usually broken off; sporidia colourless, elliptic-acuminate, constricted in the middle, and irregular.—*Curr. Linn. Trans.* xxii. p. 281, t. 48, f. 168. *B. & Br. Ann. N.H.* no. 864.

On beech. Oct. Eltham.

Ostiola normally long and protruding, but mostly broken off; when the long ostiola are rubbed off the plant looks just like *V. quaternata* or *V. turgida*. Sporidia biseriate ($\cdot 0005$ in.) $\cdot 0127$ m.m. long.—*F.C.*

2496. *Valsa tiliæ.* Tul. "Lime twig Valsa."

CONIDIA.—Tufts verrucæform, subglobose, aggregated, black; conidia obtuse, of the same colour.—*Exosporium tiliæ*, *Lk. Obs.* i. p. 8. *Fckl. exs.* no. 229.

PYCNIDIA.—Stylospores oblong, straight, obtuse, simple, hyaline.—*Rabenhorstia tiliæ*, *Fr. S.V.S.* p. 410. *Fckl. exs.* no. 582.

ASCOPHORE.—Perithecia deeply immersed in the inner bark; ostiola penetrating or concealed, surmounted by a circular greenish disc; asci stipitate, cylindrical; sporidia uniseriate, ovate-elliptic, uniseptate, slightly constricted, hyaline, greenish.—*Sphæria tiliæ*, *Tul. Ann. Sc. Nat.* v. p. 111. *Desm. exs.* no. 979 (1845). *Hercospora tiliæ*, *Tul. Carp.* ii. p. 154. *Fckl. Sym. Myc.* p. 187. *Valsaria tiliæ*, *De Not. Sfer. Ital.* 58. *Wuestneia monadelphæ*, *Fckl. exs.* no. 594. *Valsa tilaginea*, *Curr. Phil. Trans.* (1857), p. 546, t. 25, f. 12. *B. & Br. Ann. N.H.* no. 865. *Cooke exs.* no. 378.

On lime twigs.

Remarkable for the green disc above the perithecia. Mr. Currey's plant does not appear to differ specifically from that of Tulasne.

2497. *Valsa cratægi.* Curr. "Hawthorn Valsa."

Perithecia irregularly globose; ostiola rather short; sporidia biseriate, oblong or elliptical, sometimes curved; endochrome 4, sometimes 2, partite, colourless, at length strongly constricted and uniseptate.—*Curr. Linn. Trans.* xxii. p. 278, t. 48, f. 135 a. *B. & Br. Ann. N.H.* no. 848. *Cooke exs.* no. 380.

On Hawthorn.

Sporidia ($\cdot 0006$ – $\cdot 0010$ in.) $\cdot 015$ – $\cdot 025$ m.m. long. Of this species Messrs. Berkeley and Broome observe that Mr. Currey's figure of the sporidia accords with what they have seen in the early stage of growth, but at length they are strongly constricted, uniseptate, with two distinct nuclei in each articulation.

2498. Valsa stilbostoma. *Fr.* "Pallid disc Valsa."

Perithecia disposed in circles, covered with a waxy, dirty-white disc; ostiola prominent, scattered, bursting forth, and at length obliterating the disc; sporidia biseriate, colourless, acuminate-elliptic, constricted; endochrome bipartite.—*Fr. S.V.S. p. 411. Curr. Linn. Trans. xxii. t. 48, f. 140. S. stilbostoma, Fr. S.M. ii. p. 403. Fries. exs. no. 145. Valsa rhois, Cooke exs. no. 245.*

On various dead branches (except beech). [United States.]

Sporidia ($\cdot 0007$ in.) $\cdot 0177$ m.m. long.

2499. Valsa oncostoma. *Duby.* "Locust tree Valsa."

SPERMOGONIA.—Nestling in the wood, replete with a yellowish gelatine; spermatia oblong-lanceolate, simple, hyaline.

ASCOPHORE.—Perithecia mostly circinating; ostiola long, convergent, crowded; asci elongated, sessile; sporidia oblong-lanceolate, uniseptate, quadrinucleate, hyaline.—*Fckl. exs. no. 1730. Sphæria oncostoma, Duby in Kl. exs. no. 253. Diaporthe oncostoma, Fckl. Sym. Myc. p. 205.*

On *Robinia pseudacacia*. Swanscombe.

2500. Valsa circumscripta. *Mont.* "Guelder rose Valsa."

Perithecia either simple and scattered, or 3-4 together, globose-depressed, occupying the inner bark, at first covered by the cuticle, which at length vanishes, blackish; ostiola papillate, or conical; asci narrowly oblong or subcylindrical, sessile; sporidia narrowly fusiform, acute, hyaline, quadrinucleate, uniseptate (at length quadricellular).—*Mont. Syll. p. 220. Sphæria circumscripta, Fr. Ann. Sc. Nat. i. p. 298, t. 13, f. 2 (inaccurate). Diaporthe circumscripta, Fckl. exs. no. 1991. Diaporthe Beckhausii, Nke. Pyr. Germ. i. p. 295.*

On twigs of *Viburnum*. Darenth.

Although the fruit does not absolutely agree with Montagne's description, the sporidia being acute and usually only uniseptate, it appears to be the same species.

2501. Valsa enteroleuca. *Fr.* "White disc Valsa."

Orbicular, convex, free; stroma white; perithecia small; ostiola crowded, free, globose, or beaked, somewhat wrinkled; sporidia biseriate, colourless, oblong, acuminate at each end, constricted, often slightly curved, quadrinucleate, uniseptate.—

S. enteroleuca, Fr. *S.M.* ii. p. 381. *Eng. Fl.* v. p. 247. *Bull. t.* 432, f. 1. *Curr. Linn. Trans.* xxii. t. 47, f. 113.

On dried branches.

[Mid. Carolina.]

Pustules 2-3 lines broad, at length by the decay of the bark free; stroma white below, darker above, being almost obliterated by the crowded necks of the small perithecia; ostiola rather rugged, globose or beaked on the same stick.—*M. J. B.* Sporidia (·0006-·0007 in.) ·015-·017 m.m. Perithecia very numerous in each pustule, deeply imbedded in a very white stroma, when cut across horizontally, a very well defined black line is seen which arises from the wood surrounding the perithecia being blackened, thereby causing the appearance of a conceptaculum, but there is not really any.—*F. C.*

* Sporidia appendiculate.

2502. *Valsa taleola.* Fr. "Ciliated oak Valsa."

Loosely circumscribed; stroma cortical; perithecia crowded in the centre; disc white; ostiola even, immersed, punctiform; sporidia oblong, very obtuse, uniseptate, with cilia on each side of the septum and at either extremity.—*Fr. S. V. S.* p. 411. *Fckl. exs. no.* 2001. *B. & Br. Ann. N.H.* no. 849, t. 9, f. 11. *Cooke exs. no.* 252. *V. luteola*, Berk. *Outl.* p. 389. *S. taleola*, Fr. *S.M.* ii. p. 390. *Eng. Fl.* v. p. 249. *S. angulata*, *Curr. Linn. Trans.* xxii. t. 47, f. 122; xxv. p. 246. *Phil. Trans.* (1857), p. 550, t. 25, f. 20-22. *Diatrype sordida*, *B. & Br. Ann. N.H.* no. 838. *Aglaospora taleola*, *Tul. Carp.* ii. p. 168.

On oak branches. Common.

[Low. Carolina.]

Sporidia uniseriate, seldom biseriate, colourless, or pale sea-green, obtuse, constricted in the middle, furnished with four cilia, one proceeding from each pole, and one from the middle of each side; endochrome usually granular (·0008-·0012 in.) ·02-·03 m.m. long. Sometimes when the endochrome is oleaginous, and not granular, the appearance of the sporidia is quite different.—*F.C.*

2503. *Valsa thelebola.* Fr. "Tailed Alder Valsa."

Pulviniform or conical, depressed or subtruncate; asci oblong; sporidia biseriate, amber-coloured, with a greenish tint or hyaline, slightly curved, obtuse at the extremities, commonly ciliate at each end, uniseptate.—*Curr. Linn. Trans.* xxii. p. 280, t. 48, f. 157-159. *Cooke Seem. Journ.* (1866), f. 8. *Sphæria thelebola*, Fr. *S.M.* ii. p. 408, no. 193. *Sphæria ditissima*, *Tul. Ann. Sc. Nat.* 1856, iii. p. 117. *Aglaospora thelebola*, *Tul. Carp.* ii. p. 166, t. 21, f. 1-18.

On alder. Sept. Irstead, Norfolk.

Unless care be exercised in the examination, the terminal cilia may be overlooked.

Series 4. **Euvalsa.** Sporidia coloured, simple, or uniseptate.

2504. Valsa turgida. *Fr.* "Brown disc Valsa."

Pustulate; perithecia globose, nearly erect, close; ostiola obtuse, convex, at length exserted from a minute narrow disc; sporidia uniseriate, at first pale then dark opaque brown, elliptical, subacuminate.—*Fr. S.V.S. p. 412. Curr. Linn. Trans. xxii. t. 48, f. 139. S. turgida, Fr. S.M.ii. p. 400. Fries. exs. no. 262. Eng. Fl. v. p. 250. Wuestneia sphinctrina, Fckl. exs. no. 591. Anthostoma turgidum, Nke. Pyr. Germ. i. p. 121.*

On branches of beech.

[Mid. Carolina.]

The branches on which it grows, and which it generally surrounds, are of a bright red-brown. The perithecia vary in size and in the number grouped together, which is from 3-8, their ostiola collected in an erumpent brown disc. Sporidia (·0003-·0004 in.) ·0076-·01 m.m.

2505. Valsa convergens. *Fr.* "Convergent Valsa."

Perithecia about six together, minute, ovate, circinating, converging, as well as the round, somewhat attenuated, erumpent ostiola; sporidia dark brown, subcymbiform, irregular, frequently constricted.—*Fr. S.V.S. p. 411. Curr. Linn. Trans. xxii. t. 48, f. 155. S. convergens, Tode. f. 111. Sow. t. 374, f. 6. Fr. S.M. ii. p. 410. Eng. Fl. v. p. 252.*

On smooth bark (*Platanus occidentalis*).

The perithecia are under the bark so as not to be seen above, except by the undulations of the bark.—*F. C.*

2506. Valsa parmularia. *Berk.* "Triangular Valsa."

Small, pustulæform; perithecia circinating, laterally compressed; ostiola scarcely distinct, umbonate; asci linear; sporidia broadly oblong, uniseptate, brown.—*Berk. Hook. Journ. no. 308. Curr. Linn. Trans. xxii. t. 48, f. 163.*

On oak. King's Cliffe.

Scarcely a line broad, forming little pustules with a black umbo; perithecia circinating, closely packed, so as to present, when cut through, a triangle with one curved and two straight sides; ostiola in general indistinct; asci linear, containing 8 brown broadly oblong uniseptate sporidia, like those of many *Diplodia*.

This curious species has been known to me for some years, but has never been published in consequence of the doubt attached to its position, because of its growing on living bark. Externally it is not unlike *Sph. turgida*. The perithecia vary from 5-10, always laterally compressed, so that a section reminds one of the carpels of an orange.—*M.J.B.*

Series 5. **Pseudovalsa.** Sporidia multiseptate, hyaline or coloured.

2507. Valsa detrusa. *Fr.* "Barberry Valsa."

Conical; stroma bright yellow, immersed in the wood, encircled above with a conceptaculum; ostiola united, umbilicate; sporidia biseriate, colourless; endochrome quadripartite, elliptic.—*Sph. detrusa*, *Fries exs. no. 6. Berk. Mag. Zool. & Bot. no. 18. Curr. Linn. Trans. xxii. t. 47, f. 117. Wuestneia æquilineariformis, Fckl. exs. no. 588. Diaporthe detrusa, Fckl. Sym. Myc. p. 205.*

On dead barberry.

Sporidia (·0006 in.) ·015 m.m. long. Endochrome divided into four, sometimes apparently into only two portions, elliptic, subobtuse or subacuminate.—*F.C.*

2508. Valsa platanoides. *Berk.* "Sycamore Valsa."

Perithecia circinating; disc irregular, obliterated by the crowded ostiola; sporidia triseptate, or apparently so, sometimes mucronate.—*S. platanoides*, *Pers. Syn. p. 45. S. stilbostoma, var. γ. Eng. Fl. v. p. 251. Curr. Linn. Trans. xxii. t. 48, f. 140 a.*

On sycamore.

Considered by Fries a variety of *V. stilbostoma*. Sporidia (·0010-·0011 in.) ·025-·028 m.m. long.

2509. Valsa tetratrupha. *B. & Br.* "Four-spored Valsa."

Pustules minute; perithecia ovate; asci linear, sporidia four, fenestrate.—*B. & Br. Ann. N.H. no. 852, t. 10, f. 13.*

On twigs of alder.

Forming minute pustules which pierce the cuticle by means of the flat pallid disc, studded with black ostiola; asci linear; sporidia four (·0009-·001 in.) ·022-·025 m.m. long, yellow-brown, at first uni triseptate, at length fenestrate. Fruit strongly resembling that of *S. elongata*.—*B. & Br.*

It is considered by some mycologists that the present species and *Valsa fenestrata* are not really distinct, but forms of the same species.

2510. Valsa fenestrata. *B. & Br.* "Fenestrate Valsa."

Perithecia brown; ostiola obsolete; sporidia elliptic-oblong, uni-triseptate, appendiculate at either end, fenestrate.—*B. & Br. Ann. N.H. no. 853, t. 10, f. 14. Fckl. exs. no. 1999. Fenestrella princeps, Tul. Carp. ii. p. 207. Fckl. Sym. Myc. t. 6, f. 15.*

On dead oak twigs and alder.

Perithecia forming little pustules, brownish; disc narrow; ostiola obsolete; sporidia '002 in. long, elliptic-oblong, uniseptate with a small appendage at either extremity; endochrome divided into innumerable cells, septum at length obsolete, and surface of the sporidia granulated. In the plant on alder, sporidia ('002-'003 in.) '05-'07 m.m. long. There are sometimes three septa, and the appendages are more acute.—*B. & Br.*

2511. *Valsa profusa.* *Fr.* "Locust tree *Valsa*."

SPERMOGONIA.—Spermatia, filiform, uncinatè. *Cytispora leucosperma*, *Fr. exs. no.* 156.

MICROSTYLOSPORES lanceolate, continuous.—*Tul. Carp. ii. p.* 159.

ASCOPHORE.—Perithecia globose, circumscribed with a variable black line, immersed in a broadly expanded subiculum; ostiola slightly prominent, seated in a minute dirty-white disc; sporidia 4-8, with a gelatinous envelope when young, becoming olive-brown, oblong elliptic, quadrilocular, apiculate.—*Fr. S.V.S. p.* 411. *S. profusa*, *Fr. S.M. ii. p.* 392. *Fries. exs. no.* 11. *Moug. exs. no.* 871 (partly) *Eng. Fl. v. p.* 249. *Curr. Linn. Trans. xxii. t.* 47, *f.* 128. *Aglaospora profusa*, *Tul. Carp. ii. p.* 159. *Fckl. exs. no.* 583.

On branches of *Robinia pseudacacia*.

Sporidia ('001-'002 in.) '025-'05 m.m.

2512. *Valsa aglæostoma.* *B. & Br.* "Small tufted *Valsa*."

Perithecia ovate; ostiola crowded, shining; sporidia oblong, 4 septate, torulose.—*B. & Br. Ann. N.H. no.* 862, *t.* 10, *f.* 17.

On elm twigs. Leicestershire.

Perithecia in groups of from 4 to 6, ovate; ostiola crowded, cylindrical, shining; sporidia oblong 4 septate, constricted at each septum ('0008-'001 in.) '02-'025 m.m. long. Resembling somewhat *V. hypodermia*, but differing essentially in the fruit and in other points.—*B. & Br.*

2513. *Valsa Innesii.* *Curr.* "Innes's Tailed *Valsa*."

Perithecia irregularly globose; ostiola elongated, and frequently thickened at the apex; sporidia biseriata, colourless, thrice constricted, acute at either end, often appendiculate.—*Curr. Linn. Trans. xxii. p.* 281, *t.* 48, *f.* 116. *B. & Br. Ann. N.H. no.* 863. *Fckl. exs. no.* 1993. *Diaporthe Innesii*, *Fckl. Sym. Myc. p.* 204.

Sporidia ('001-'0012 in.) '025-'03 m.m. long.

Externally much resembling *V. pulchella*, but smaller, and differing altogether in fructification from that species.

2514. Valsa vestita. Fr. "Woolly Valsa."

SPERMOGONIA.—Spermatia cylindrical, straight.

ASCOPHORE.—Circinating ; perithecia crowded, globose, covered at first with a dense, pallid, yellowish, sub-evanescent woolly down ; ostiola united ; sporidia elliptic, transversely and longitudinally septate. *Curr. Phil. Trans.* (1857), p. 546. *Linn. Trans.* xxii. t. 48, f. 161. *Fr. S.M.* ii. p. 410. *B. & Br. Ann. N.H.* no. 866. *Thyridium vestitum*, *Fckl.*

On dead twigs (beech).

Sporidia (0006-0008 in.) 015-02 m.m. long. Mr. Currey believes that the woolly covering produces as macrostylospores a species of *Steganosporium*.

2515. Valsa hapalocystis. B. & Br. "Velvety Valsa."

Scattered, covered ; perithecia subglobose, delicate, minutely tomentose, neck oblique, constricted below, shortly fusiform ; sporidia oblong-elliptic, appendiculate at either end, biseptate.—*B. & Br. Ann. N.H.* no. 615, t. 10, f. 12. *Cooke exs.* no. 253 (sub *Sphæria*). *Calospora hapalocystis*, *Fckl. Sym. Myc.* p. 191. *Hapalocystis Berkelaui*, *Fckl. exs.* no. 585.

On dead plane twigs. Batheaston.

The perithecia are peculiarly delicate, and not so decidedly tomentose as in *V. vestita*.

D. Sphæriæi.

Cæspitose—

Perithecia carbonaceous, erumpent *Cucurbitaria.*
Perithecia waxy, astomous *Gibbera.*

Scattered—

Perithecia immersed, sporidia oozing out and staining the matrix *Massaria.*
Perithecia erumpent. Ostiola large, compressed *Lophiostoma.*
Perithecia carbonaceous, pierced *Sphæria.*
Perithecia membranaceous, innate *Sphærella.*
Perithecia fragile, hairy, superficial *Venturia.*
Perithecia sclerotoid *Pyrenophora.*
Perithecia membranaceous, rostrate, sporidia oozing at the ostiolum *Ceratostoma.*
Perithecia membranaceous, scutiform *Microthyrium.*
Perithecia astomous, reticulated. Sporidia sub-globose. . . . *Orbicula.*
Perithecia mouthless, then pierced. Parasitic *Stigmataea.*
Perithecia astomous, concealed, at length splitting *Hypospila.*
Perithecia obsolete ; nucleus immersed *Isothea.*
Perithecia elliptic, bursting longitudinally *Dichaena.*
Perithecia elongated, often fringed at the mouth. Parasitic *Capnodium.*

Gen. 352.

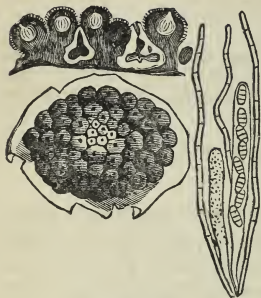
CUCURBITARIA, Gray.

Fig. 389.

Cæspitose, erumpent; perithecia globose, depressed, or minutely papillate; sporidia plurilocular, and cellular, or two to four celled and hyaline.—*Tul. Carp. ii. p. 214.*

(Fig. 389.)

2516. Cucurbitaria laburni.

De Not. "Laburnum Cucurbitaria."

ASCOPHORE.—Cæspitose; stroma subcompact; perithecia globose, rugulose, black; ostiola papillæform; sporidia multicellular, dark

brown.—*Tul. Carp. ii. p. 215, t. 27. De Not. Soc. Critt. Ital. (1863), iv. p. 214. Fckl. exs. no. 965. Sphæria laburni, Pers. Syn. p. 50. Nees. f. 325. Fr. S.M. ii. p. 413. Fries. exs. no. 34. Moug. exs. no. 873. Eng. Fl. v. p. 253. Curr. Linn. Trans. xxii. t. 49, f. 179.*

On dead branches of laburnum.

(Fig. 389.)

2517. Cucurbitaria elongata. Grev. "Elongated Cucurbitaria."

MACROSTYLOSPORES ovate or ovate-oblong, 3-5 septate, dark.

MICROSTYLOSPORES linear ovate, simple.

ASCOPHORE.—Black; stroma very long, ambient, effused; perithecia at first immersed, then erumpent, subcæspitose, globose, marked with a depressed ring round the papillæform ostiola; sporidia dark brown, constricted in the middle, multicellular.—*Grev. t. 195. Fckl. exs. no. 970. Tul. Carp. ii. p. 217. Rabh. exs. no. 727. Sphæria elongata, Fr. S.M. ii. p. 422. Fries. exs. no. 33. Moug. exs. no. 875. Eng. Fl. v. p. 255.*

On dead laburnum, *Robinia*, &c.

[United States.]

2518. Cucurbitaria spartii. De Not. "Broom Cucurbitaria."

ASCOPHORE.—Black; stroma covered, ambient, effused; perithecia erumpent, ovate, aggregated and confluent; ostiola obtuse; sporidia uniseriate, dark brown, constricted in the middle, acuminate, multicellular.—*De Not. Schema p. 40. Tul. Carp. ii. p. 219. Fckl. exs. no. 974. Sphæria Spartii, Fries. exs. no. 234. Schm.*

exs. no. 178. Moug. exs. no. 664. Fr. S.M. ii. p. 424. Curr. Linn. Trans. xxii. t. 49, f. 189. Cooke exs. no. 388.

On dead broom.

Always covered with the bark when young, then erumpent; ostiola truncate, at length pierced, perforating the cuticle. Mr. Currey (*Micro. Journ. vii. p. 234*) says that this is identical with *S. elongata*, *Fr. Sporidia* ('0011-'0012 in.) '025-'03 m.m. long.

2519. Cucurbitaria acervata. *De Not.* "Top-shaped Cucurbitaria."

ASCOPHORE.—Cæspitose; perithecia turbinate, nearly even, astomous, black, collapsing, and cup-shaped; sporidia biseriate, colourless, hyaline, curved.—*De Not. Schema p. 40. Tul. Carp. ii. p. 218. Fckl. exs. no. 2169. Sphæria acervata, Fr. S.M. ii. p. 416. Berk. exs. no. 174. Curr. Linn. Trans. xxii. t. 49, f. 184.*

On a dead apple tree. Apethorpe. [Mid. Carolina.]

Sporidia ('0003-'0005 in.) '0076-'0127 m.m. long.

2520. Cucurbitaria berberidis. *Gray.* "Barberry Cucurbitaria."

SPERMOGONIA.—Spermatia minute, cylindrical.

ASCOPHORE.—Cæspitose; perithecia globose, mouthless, at first red, then red-brown, at length rimoso-rugose, black; sporidia uniseriate, yellow then brown, constricted in the middle, acuminate, multicellular, muricated.—*Grev. t. 84. Tul. Carp. ii. p. 219. Sphæria berberidis, Fr. S.M. ii. p. 415. Fries. exs. no. 35. Moug. exs. no. 874. Fr. Obs. i. t. 4, f. 3. Eng. Fl. v. p. 254. Curr. Linn. Trans. xxii. t. 49, f. 177.*

On dead branches of barberry. [Mid. Carolina.]

Sporidia ('0011-'0016 in.) '025 '035 m.m.

2521. Cucurbitaria macrospora. *Tul.* "Large spored Cucurbitaria."

CONIDIA.—Disc slightly depressed; conidia fusiform, 7-12 septate, pellucid above, greatly elongated and curved back.—*Coryneum macrosporum, Berk. Eng. Fl. v. p. 355. Rabh. F.E. no. 75. Sporidesmium vermiforme, Fres. ii. t. 6, f. 56-58. (See no 1393, ante.)*

ASCOPHORE.—Perithecia opaque, rather rough; ostiola at length pierced; asci clavate; sporidia large, shortly fusiform, dark-brown, ultimately triseptate.—*Tul. Carp. ii. p. 221, t. 26. f.*

6-14. *Fckl. exs. no. 2047. Melogramma oligosporum, B. & Br. Ann. N.H. no. 895, t. xi. f. 38. Sphæria macrospora, Desm. Ann. Sc. Nat. (1848), p. 350. Desm. exs. no. 1756. Curr. Micr. Journ. (1859), Melanconis macrospora, Tul. Ann. Sc. Nat. t. ix. f. 19. iv. t. 5, p. 110.*

On dead bark. Twycross.

Forming roundish patches bursting through the cuticle; perithecia opaque, rather rough; asci clavate; sporidia shortly fusiform (.0022 in.) .06 m.m. long, at first surrounded by a hyaline border, changing from uniseptate to triseptate; dissepiments, especially the central one, constricted.—*B. & Br.*

2522. Cucurbitaria naucosa. Fckl. "Elm Cucurbitaria."

PYCNIDIA.—*Diplodia melaena, Lev. Rabh. F.E. 348. Fckl. exs. 542.*

MACROSTYLOSPORES.—One to four septate, muriform.—*Fckl. exs. no. 92.*

ASCOPHORE.—Cæspitose; perithecia collected in heaps, globose, even, brownish-black, astomous; asci clavate; sporidia obovate, multicellular.—*Fckl. Sym. Myc. p. 173. Fckl. exs. no. 2042. Sphæria naucosa, Fr. S.M. ii. p. 516. Kunze. M.H. ii. p. 36. B. & Br. Ann. N.H. no. 974, t. 17, f. 27.*

On elm. Jan. Batheaston.

Sporidia with vertical and transverse septa (.001 in.) .025 m.m. long. The perithecia when old are almost black, the ostiola obsolete, the surface smooth and shining, with generally a single fissure at the apex.—*B. & Br.*

2523. Cucurbitaria populina. Fr. "Poplar Cucurbitaria."

Cæspitose; stroma compact; perithecia ovate, even, black; ostiola papillæform; asci cylindrical, stipitate; sporidia uniseriate, uniseptate, pale brown.—*Fr. S.V.S. p. 390. Sphæria populina, Pers. Obs. ii. t. 5, f. 10, 11. Fr. S.M. ii. p. 413. Fckl. exs. no. 966. Berk. Mag. Zool. & Bot. no. 96, vol. ii. t. 7 a-c. Otthia populina, Fckl. Sym. Myc. p. 170.*

On ash.

2524. Cucurbitaria cupularis. Fr. "Cup-like Cucurbitaria."

Cæspitose; perithecia globose, rugulose, mouthless, black, collapsing, and then cup-shaped; asci cylindrical, stipitate; sporidia biseriate, cylindrical, curved, obtuse, hyaline.—*Fr. S.V.S. p. 391. Fckl. exs. no. 968. Sphæria cupularis, Pers. Syn. t. 1, f. 9, 10. Fr.*

S.M. ii. p. 416. *Fries. exs. no. 231. Moug. exs. no. 771. Eng. Fl.* v. p. 254. *Nitschkia Fuckelii*, *Nke. Fckl. Sym. Myc.* p. 165, t. 3, f. 1.

On dead branches (plum, elm, &c.).

Gen. 353.

GIBBERA, Fr.

Cæspitose; perithecia between waxy and horny, aculeolate, astomous; sporidia translucid.—*Fr. S.V.S. p. 402. Cooke Brit. Fungi, p. 158.*

(*Fig. 390.*)

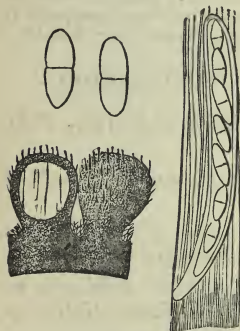


Fig. 390.

2525. *Gibbera vaccinii.* Fr.
“Cowberry *Gibbera.*”

Cæspitose, superficially innate; perithecia subglobose, mouthless, jet black, at first villous, then naked; sporidia uniseriate, nearly colourless, almost almond-shaped, slightly constricted, uniseptate.—*De Not. Sfer. Ital. t. 93. Curr. Linn. Trans. xxii. t. 58, f. 49.*

Sph. Vaccinii, *Sow. t. 373, f. 1. Fr. S.M. ii. p. 409. Fries exs. no. 51. Eng. Fl. v. p. 254. Moug. exs. no. 665.*

On living branches of *Vaccinium Vitis-idaea*.

Disposed in roundish tufts which generally become confluent, and form longitudinal, irregular masses immediately beneath the bunch of leaves.—*M.J.B. Sporidia* (‘0006 in.) ‘015 m.m. long. (*Fig. 390.*)

2526. *Gibbera Saubinetii.* Mont. “Herb *Gibbera.*”

Emergent; perithecia solitary or aggregated on a brown stroma, globose, rugulose, at length collapsed and umbilicate; asci diffuent; sporidia fusiform, hyaline, lunately curved, 3-5 septate.—*Mont. Syll. p. 252. B. & Br. Ann. N.H. no. 868. Mont. Fl. Alg. p. 479.*

On herbaceous stems and elm twigs.

[*Low. & Mid. Carolina.*]

This has the violet walls of *N. pulicaris*, but the fruit is much larger, that on elm may be considered as a variety with ovate perithecia and rather large sporidia (‘0012 in. long) and rather torulose. The sporidia of the typical form are (‘001 in.) 025 m.m. long.

GIBBERA PULICARIS, Fr.—See *Nectria pulicaris*.

Gen. 354.

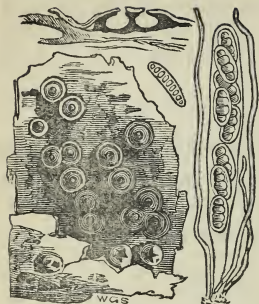
MASSARIA, De Not.

Fig. 391.

Perithecia coriaceous or sub-carbonaceous, immersed, with an erumpent ostiolum; sporidia large, septate, sometimes simple, involved in mucus (or with a thick hyaline epispore) oozing out, and usually staining the matrix.—*Berk. Outl.* p. 402. *Tul. Carp.* ii. p. 223.

(Fig. 391.)

* Sporidia septate.

2527. Massaria siparia. *Tul.* "Woolly Massaria."

PYCNIDIA.—Perithecia sub-solitary, lenticular; stylospores obclavate, fasciculate, 3-5 septate, brown, terminal cell hyaline.—*Prosthium betulinum*, *Kze. M.H. i. t. i. f.* 10. *Fr. S.M.* iii. p. 484. *Eng. Fl.* v. p. 297. *Curr. Phil. Trans.* cxlvii. t. 26, f. 30, 31. *Corda. Ic.* iii. f. 67.

ASCOPHORE.—Covered, scattered; perithecia large, depressed, woolly; ostiola obtuse, very short; asci clavate, large; sporidia brown, oblong, cymbiform, cellular, involved in mucus.—*Tul. Carp.* ii. p. 232. *Sphæria siparia*, *B. & Br. Ann. N.H.* no. 625, t. 9, f. 8. *Rabh. F.E.* no. *Curr. Linn. Trans.* xxii. t. 58, f. 98. *Fckl. exs.* no. 2011. *Fckl. Sym. Myc.* t. 6, f. 5.

On birch. Feb.

The perithecia are clothed with a more or less dense ferruginous wool, depressed, covered by the cuticle. Sporidia (.002-.0024 in.) .05-.06 m.m. long.

2528. Massaria argus. *Tul.* "Eyed Massaria."

PYCNIDIA.—Globose, densely clothed with white or cinereous flocci; stylospores large, on septate peduncles, at length oblong-elliptic, multilocular, at first with a gelatinous envelope, oozing out and forming a black mass.—*Hendersonia polycystis*, *B. & Br. Ann. N.H.* no. 415. *Rabh. F.E.* no. 264. *Myxocyclus confluens*, *Fres. Beitr.* t. 7, f. 41-45.

ASCOPHORE.—Covered; perithecia large, depressed, collapsed,

opaque; asci large, clavate; sporidia biserial, oblong, slightly curved, ocellate, 5-6 septate, involved in mucus.—*Tul. Carp.* ii. p. 227. *Sphæria argus*, B. & Br. *Ann. N.H.* no. 626, t. 9, f. 9. *Curr. Linn. Trans.* xxii. t. 58, f. 95. *Fres. Beitr.* t. 7, f. 7-17. *Rabh. exs.* no. 259.

On dry birch twigs.

The *Hendersonia* referred to this species by Tulasne is referred by Currey to *Diatrype lanciformis*, Fr. (See p. 436, ante.)

Entirely concealed by the cuticle, scattered; perithecia depressed collapsed, dull, as if very minutely pulverulent; ostiolum minute; asci clavate, large; sporidia biserial, oblong, slightly curved when seen laterally, at first consisting of two joints; these soon acquire seven endochromes, of which four belong to the larger division, at a later period they become much darker, and true septa are formed varying in number from five to six. Till they acquire this dark tint they have a thick pellucid gelatinous coat.—B. & Br. *Sporidia* '002-0024.

2529. Massaria fœdans. Fr. "Flask-spored Massaria."

ASCOPHORE.—Scattered; perithecia immersed, depresso-globose; ostiolum papillæform; sporidia biserial, brown, biseptate, lageniform, apicular cell lighter coloured, with a gelatinous coat. Fr. *S.V.S. Fckl. Sym. Myc.* t. 6, f. 4. *Fckl. exs.* no. 2009. *Sph. fœdans*, Fr. *S.M. Corda. Sturm.* t. 54. *S. amblyospora*, B. & Br. *Ann. N.H.* no. 627, t. 10, f. 10. *Curr. Linn. Trans.* xxii. t. 59, f. 99.

On dead branches of elm.

Scattered, scarcely visible externally; asci large, clavate, paraphyses flexuous; sporidia large, at first hyaline, consisting of two subconical articulations placed base to base, one of these gradually increases in diameter and becomes very obtuse, a septum is then formed at the base of the smaller articulation, and sometimes, though rarely, there is a third septum in the other cells. In every stage, except in extreme age, when ejected they have a gelatinous coat. Distinguished from *M. inquinans* by the peculiar form of the sporidia, and especially in their mode of formation.—B. & Br.

2530. Massaria pupula. Tul. "Clear-spored Massaria"

PYCNIDIA.—*Stegonosporium pyriforme*, Corda *Ic.* iii. f. 61.

ASCOPHORE.—Scattered; perithecia covered, orbicular, concentrically striate, black; orifice when stripped of the epidermis whitish; papilla yellowish; sporidia oblong, straight, rarely curved, obtuse, divided by a septum into two unequal parts—the upper trilocular, the lower bilocular.—*Tul. Carp.* ii. p. 225. *Fckl. exs.* no. 2010. *Fckl. Sym. Myc.* t. 6, f. 2. *Sph. pupula*, Fr. *S.M.* ii. p. 484. *Fries. exs.* no. 16, 317. *Hercospora pupula*, Berk. *Outl.* p. 402.

On *Philadelphus coronarius*. Apethorpe.

The papilla is blackish, bursting the epidermis longitudinally and frequently itself longitudinal.—*M.J.B.* Sporidia .04 m.m. (.0015 in.) long, .016 m.m. (.0005 in.) broad.

2531. *Massaria inquinans*. Tode. "Large-spored *Massaria*."

PYCNIDIA.—Solitary; microstylospores whitish, narrowly ovate-oblong, or cylindrical, obtuse, straight, simple.

ASCOPHORE.—Gregarious; perithecia immersed, globose, even, smooth, covered with the epidermis; papilla erumpent, black; sporidia ovate-oblong, dark brown, triseptate, large, involved in mucus.—*Cooke exs. no. 258. Fckl. Sym. Myc. t. 6, f. 7. Fckl. exs. no. 803. Berk. Outl. p. 402. Massaria Bulliardii, Tul. Carp. ii. p. 236. Sphæria inquinans, Tode. f. 85. Fr. S.M. ii. p. 456. Nees. f. 356. Eng. Fl. v. p. 269. S. ellipsosperma, Sow. t. 372, f. 3. Variolaria, Bull. t. 492, f. 3. Sphæria gigaspora, Desm. Berk. Outl. p. 398. Curr. Linn. Trans. xxii. p. 326, t. 59, f. 100. Cooke exs. no. 257. Sphæria Corni. Mont. Ann. Sc. Nat. i. p. 340, t. 13, f. 6.*

On branches of sycamore, maple, birch, cornel, &c.

By an error *Stilbospora macrosperma*, B. & Br. is referred to this species at p. 468. (See no. 1391 ante), instead of *Melanconis Berkeleyi*, Tul. no. 2457.

2532. *Massaria bufonia*. Tul. "Oak *Massaria*."

Scattered; perithecia globose, rather depressed; ostiola short, perforating the bark; asci cylindrical; sporidia dark brown, uniseriate, oblong, uniseptate, involved in mucus.—*Tul. Carp. ii. p. 237. Sphæria bufonia. B. & Br. Ann. N.H. no. 629, t. 10, f. 13. Curr. Linn. Trans. xxii. t. 59, f. 102.*

On small dead branches of oak. Easton.

Scattered over the branches, which are rough with the little penetrating ostiola. Perithecia globose, slightly depressed; ostiolum central, papillæform, with scarcely any neck. Asci cylindrical, containing a single row of oblong uniseptate sporidia, which have a thick gelatinous coat, which ultimately vanishes.—*B. & Br.*

Sporidia (.0008-.0011 in.) .02-.025 m.m. long.

2533. *Massaria eburnea*. Tul. "Pale-spored *Massaria*."

PYCNIDIA.—Large, depressed, covered with the cuticle; stylospores cylindrical, oblong, with 7 or 8 endochromes, hyaline, oozing out in an irregular mass.—*Septoria princeps, B. & Br. Ann. N.H. (1861), vii. p. 380, t. 15, f. 11.*

ASCOPHORE.—Hypodermal, pulviniform or conical, depressed or subtruncate; perithecia circinating, with long necks; asci large, obovate-cylindrical, obtuse, 8-spored; sporidia elliptical or broadly ovate, quadrilocular, constricted at the joints, obtuse, smooth and pallid.—*Tul. Carp.* ii. p. 239, t. 25, f. 5-9. *Cooke Seem. Journ.* t. 45, f. 9. *Fckl. Sym. Myc.* t. 6, f. 8. *Fckl. exs. no.* 2158. *Cooke exs. no.* 371. *Sphæria pupula*, var. *minor*, *Desm. exs.* (1851), no. 1764. *Ann. Sc. Nat.* (1852), xviii. p. 362.

On beech. Shere, January, 1866 (Dr. E. Capron). (*Fig.* 391.)

2534. Massaria Currei. *Tul.* “Currey’s Lime Massaria.”

PYCNIDIA.—Mixed with the ascophores; stylospores broadly ovate, unilocular.

ASCOPHORE.—Perithecia black, acutely papillate; sporidia biseriate, dark brown, lageniform, uniseptate, with a gelatinous coat.—*Tul. Carp.* ii. p. 231. *Sphæria Tilix*, *Curr. Linn. Trans.* xxii. t. 59, f. 104.

On lime.

“It is not uncommon, and cannot be mistaken for any other if attention be paid to its fruit, and to its growing upon lime.”—*F.C.*

2535. Massaria holoschista. *Tul.* “Biconic Massaria.”

PYCNIDIA.—Sublentiform, black, covered; stylospores brown, 12-20 connate, in a stellate manner, at length ejected in tendrils. *Prosthemium stellare*, *Reiss. Bot. Zeit.* 1853, t. 3, f. 28-31. *B. & Br. Ann. N.H.* no. 939, t. 15, f. 10. (See also fig. 173, ante.)

ASCOPHORE.—Perithecia greenish-black, at length collapsed, surrounded by whitish flocci; sporidia biconical, mucous; septum passing through the gelatine.—*Tul. Carp.* ii. p. 234. *Sphæria holoschista*, *B. & Br. Ann. N.H.* no. 977, t. 17, f. 30.

On alder. West of England.

Perithecia blackish-green, collapsed, and then looking like a *Peziza* surrounded by whitish hairs. Sporidia surrounded by gelatine, biconical, uniseptate, constricted at the septum, which passes completely through the mucous envelope, length when the gelatine has been absorbed (‘0015-‘0018 in.) ‘03-‘04 m.m. long.—*B. & Br.*

** Sporidia simple=*Hypocopra*.

2536. Massaria fimeti. *Fr.* “Dung Massaria.”

Spermatia cylindrical, straight, hyaline, simple.

ASCOPHORE.—Crust-like, immersed, black; perithecia oblong,

at length connate; ostiola elongated, conical, emergent; asci cylindrical; sporidia uniseriate, ovate-oblong, simple, opaque, nearly black.—*Sph. fimeti*, Pers. Syn. p. 64. Fr. S.M. ii. p. 373. Fries. exs. no. 269. Eng. Fl. v. p. 246. *Hypocopra fimeti*, Fckl. Sym. Myc. p. 240. Fckl. exs. no. 1001. *Sphæria equina*, Fckl. exs. no. 1802.

On horse and cow dung. Appin. [Mid. Carolina.]

Gen. 355.

LOPHIOSTOMA, De Not.



Fig. 392.

Perithecia carbonaceous, erumpent; ostiolum large, compressed. Sporidia two or many celled, coloured or hyaline.

(Fig. 392).

2537. Lophiostoma macrostoma. Fr. "Large-mouthed Lophiostoma."

Perithecia scattered, at first immersed, at length emergent, black; ostiolum compressed, labiate; sporidia uniseriate, yellow, then brown, 7-septate, the last joint at each extremity small and colourless.—De Not. Schema, p. 45. Cooke Trans. Bot. Ed. t. 6, f. 1. *Sphæria macrostoma*, Tode. f. 76, 77. Fr. Sys. Myc. vol. ii. p. 469. Fries. exs. no. 345. B. & Br. Ann. N.H. no. 881. Desm. exs. no. 772. Curr. Linn. Trans. xxii. p. 321, pl. lviii. fig. 65? Fckl. exs. no. 923.

On bark of sycamore and on holly twigs.

Sporidia (.0014 in.) .035 m.m. long. Mr. Currey's measurement is .0010-.0012 in. long. Messrs. Berkeley & Broome's description of the sporidia is ".0008 in. long, oblong torulose, triseptate, very like those of *S. Aspegrenii*." My specimens accord with those published by Desmazieres and Fuckel. The sporidia figured by Mr. Currey (fig. 65) appear to belong to the present species.

2538. Lophiostoma bicuspidata. Cooke. "Two-horned Lophiostoma."

Perithecia scattered, black, immersed, elevating and pushing through the matrix with their narrow elongated ostiola; asci clavate; sporidia biseriate, 5 septate, with occasional transverse septa, constricted, brown, each extremity at first furnished with a hyaline beak bent at both ends in the same direction, so as to

give a curved appearance to the sporidia.—*Cooke Trans. Bot. Soc. Edin. vol. ix. t. 6, f. 4. Sphæria macrostoma, Curr. Linn. Trans. xxii. p. 321, pl. lviii. f. 64?*

On decorticated twigs. Oct. Shere, Surrey.

var. β. Sporidia larger ($\cdot 0012$ in.) $\cdot 03$ m.m. long, with no transverse septa; otherwise identical.

On dead *Clematis vitalba*. April. Shere.

This species is very distinct from *Sphæria macrostoma*, Tode. It is possible that Mr. Currey's fig. 64 may belong to it. Externally there is considerable resemblance, except that the perithecia are smaller. The sporidia are ($\cdot 0009$ in.) $\cdot 0228$ m.m. long, and in *var. β.* ($\cdot 0012$ in.) $\cdot 03$ m.m. long.

2539. Lophiostoma viridaria. *Cooke.* "Green-spot Lophiostoma."

Perithecia scattered over conspicuous green spots an inch or more in length, semi-immersed, black; ostiolum, linear, asci cylindrical; sporidia uniseriate, triseptate, attenuated towards each extremity, constricted at the septa, brown, with a large nucleus in each cell. When free the sporidia exhibit a distinct outer transparent membrane which invests them.—*Cooke Trans. Bot. Ed. vol. ix. t. 6, f. 2.*

On decorticated twigs of Maple. Jan. Shere, Surrey.

The conspicuous green patches on which the perithecia are usually found resemble those caused by the mycelium of *Helotium æruginosum*, indeed, it is not improbable that the latter originates the patches upon which the *Sphæria* locates itself. Hitherto the green patches and the perithecia have always been found associated. The perithecia are larger and more prominent than in *Lophiostoma bicuspidata*, and both are very distinct from *S. macrostoma*, Tode, in their fructification, although somewhat resembling small forms of it in external appearance. The fruit much resembles that of some species of *Massarina*. Length of sporidia ($\cdot 0014$ in.) $\cdot 035$ m.m.

2540. Lophiostoma nucula. *Fr.* "Oak-bark Lophiostoma."

Sub-gregarious, black; perithecia minute, innate, superficial, ovate, even at first papillary, then pierced; sporidia uniseriate, oblong, obtuse, triseptate, constricted at the centre, hyaline.—*De Not. Schema, p. 46. Sphæria nucula, Fr. Sym. Myc. vol. ii. p. 466. Fries. exs. no. 230. Berk. Eng. Fl. vol. v. p. 2, p. 266. Fckl. exs. no. 2168.*

On oak bark.

The figure given in *Trans. Bot. Ed. t. 6, f. 7* belongs to *Lophiostoma gregarium*, Fckl. exs. no. 929, and not to this species, to which Fückel at first referred it. (See *Sym. Myc. p. 158.*)

- 2541. Lophiostoma fibritecta.** Berk. "Bleached Larch Lophiostoma."

Scattered, minute, black, often slightly elongated, depressed; ostiolum sometimes quite obsolete, but frequently present, and varying from punctiform to linear; asci clavate, varying greatly in length, paraphyses slender; sporidia curved, subfusiform, yellow-brown, quinque-septate.—*De Not. Schema*, p. 46. *Cooke Trans. Bot. Ed. vol. ix. Sphæria fibritecta*, Berk. in *Hook. Journ.* 1853, p. 43. *B. & Br. Ann. Nat. Hist. no. 777, Berk. Outl. p. 397.*

On bleached larch planks. Dec. King's Cliffe.

Sporidia .04 m.m. long.

"The perithecia are rather larger than those of the other fungi commonly present in similar situations. The contents are white. Nothing can be more variable than the ostiola of this species. Even in extreme cases it is entitled only to a place amongst the *Platystomæ* from affinity rather than from well defined characters."—*Berkeley.*

- 2542. Lophiostoma angustilabra.** B. & Br. "Gorse Lophiostoma."

Perithecia half-immersed, rugulose, somewhat elongated; ostiolum compressed, narrow; asci clavate; sporidia biseriate, fusiform, curved, uniseptate, constricted at the septum, each articulation containing from two to three nuclei, and terminating in a hyaline point.—*Cooke Trans. Bot. Ed. t. 6, f. 3. Sphæria angustilabra*, B. & Br. *Ann. N.H. no. 881, t. xi. f. 27.*

On gorse. Leicestershire—Shere, Surrey.

Sporidia (.0015-.0016 in.) .04-.043 m.m. long.

"Differing from *S. excipuliformis* in the structure of the spores, which are possibly at length multiseptate; but if so, they are at first composed of two very elongated cones opposed to each other at their bases, and strongly constricted at the commissure."—*B. & Br.*

- 2543. Lophiostoma sex-nucleata.** Cooke. "Six-nucleate Lophiostoma."

Scattered; perithecia elongated, black, slightly rugose; at first immersed, then emergent; ostiolum compressed; sporidia biseriate, fusiform, hyaline, slightly curved, five-septate, constricted at the centre, and but little at the other septa, each articulation containing a single nucleus.—*Cooke Trans. Bot. Ed. vol. ix. t. 6, f. 8.*

On nettle stems. March. Shere, near Guildford.

Sporidia (.0014 in.) .035 m.m. long.

This can hardly be considered as a form of *S. angustilabra*, since that species, even when the septa can be discerned, still remains quadri-nucleate. The length is slightly less, and the hyaline membrane absent. It appears to succeed *Sphæria coniformis* on old nettle stems, and has been overlooked from its casual resemblance to the remains of the dispersing perithecia of *S. coniformis*. (Fig. 392.)

2544. Lophiostoma excipuliforme. *Fr.* "Exciple-mouthed Lophiostoma."

Scattered; perithecia emergent, ovate, black, rugulose; lips of the ostiolum longer than the short neck; sporidia uniseriate, fusiform, curved, with about six septa; commissures not constricted.—*De Not. Schema* p. 45. *Cooke Trans. Bot. Ed. vol. ix. t. 6, f. 10.* *Sphæria excipuliformis*, *Fr. Obs. t. 4, f. 5.* *Fr. exs. no. 88.* *Fr. Syst. Myc. vol. ii. p. 469.* *Berk. Eng. Fl. vol. v. p. 266.* *B. & Br. Ann. N.H. no. (880).*

On bark, dead wood, and furze. King's Cliffe, &c.

[Mid. Carolina.]

Sporidia (·0012 in.) ·03 m.m. long.

The Rev. M. J. Berkeley says that the typical form published by Fries in *Scleromyces Suecia* has sporidia of precisely the same shape, but twice as long, and that he finds them sometimes ·0028 in. long. "It is distinguished from the other wide-mouthed species by its short cylindric neck."

2545. Lophiostoma Jerdoni. *B. & Br.* "Jerdon's Lophiostoma."

Perithecia scattered or slightly crowded, sub-globose, with narrow linear ostiola; asci clavate; sporidia biseriate (·0012-·00125 in.) ·03 to ·033 m.m. long, strongly constricted in the centre, as also each of the two bi-tri-nucleate joints.—*Cooke Trans. Bot. Ed. ix. t. 6, f. 5.* *Sphæria Jerdoni*, *Berk. & Br. Ann. N. H. no. 975, t. xvii. f. 28.*

On *Rubus idæus* and on elm.

Sporidia (·0012-·00125 in.) ·03-·033 m.m. long.

2546. Lophiostoma caulium. *De Not.* "Herbaceous Lophiostoma."

Perithecia immersed, globoso-elliptic, black; ostiolum naked, elliptic or linear; asci clavate; sporidia crowded, or bisenate, fusiform, attenuated, straight or curved, 7-septate, with a greenish tint.—*Seriacei italici*, no. 70. *Micro. Ital. viii. cum icone.* *Cooke Trans. Bot. Edin. t. 6, f. 6.* *Lophiostoma herbarum*, *Fr. V.A.H. 1818, p. 114.* *Sphæria caulium*, *Fr. Sys. Myc. vol. ii. p. 510.* *Fries exs. no. 465.* *Desm. Ann. and Sc. Nat. xv. t. 14, f. 2, a.* *Berk. & Br. Ann. N.H. no. 982.* *Fckl. exs. no. 927.*

On dead stems of *Epilobium hirsutum*, &c.

Sporidia (·0015 in.) ·04 m.m. long.

2547. Lophiostoma arundinis. *De Not.* "Reed Lophiostoma."

Perithecia covered, sub-erumpent, globose, rugulose, black; ostiolum thick, naked, compressed, labiate; sporidia biseriate, yellowish, 3-5 septate, slightly curved, pointed at each extremity.—*Schema di Class.* p. 46. *Cooke Trans. Bot. Edin.* t. 6, f. 9. *Sphæria arundinis*, *Fr. Sys. Myc.* vol. ii. p. 510. *B. & Br. Ann. Nat. Hist.* no. 639, 27. *Kunze. exs.* no. 55. *Curr. Linn. Trans.* xxii. p. 330, pl. lix. f. 124. *Rabh. exs.* no. 647. *Berk. Outl. Fung.* p. 397. *Berk. exs.* no. 87. *Fckl. exs.* no. 926.

On reeds and grasses. [Low. Carolina.]

"The spores are at first uniseptate, and the contents of the two portions are then divided into two or three endochromes, in which respect there is an essential difference between this species and all forms of *Sphæria culmifraga*."—*Berk.*

"Sporidia fusioidea 4-6 locularia, sæpe curvula fuliginea."—*De Notaris.* (Pl. vi. fig. 9, with free sporidia.)

2548. Lophiostoma semilibera. *De Not.* "Half-free Lophiostoma."

Scattered; perithecia minute, ovate-elliptical, semi-immersed, black, shining; ostiolum compressed, cristate; asci clavate; sporidia fusiform, straight, or curved, acute at each extremity, quinque-septate.—*Schema di Class.* p. 46. *Cooke Trans. Bot. Edin.* vol. ix. *Sphæria semilibera*, *Desm. exs.* no. 1787. *Ann. Sc. Nat.* ser. iii. vol. vi. p. 78, 1846. *B. & Br. Ann. N.H.* no. 641. *Fckl. exs.* no. 1705.

On the culms of reeds and grasses.

Sporidia (·033-·03) m.m. long.

Found by Desmazieres on *Bromus sylvaticus*, and it occurs also on *Dactylis glomerata* and *Triticum sativum*. The form on reeds is proportionately larger than on the smaller grasses.

Gen. **356. SPHÆRIA**, Hall.

Perithecia black, carbonaceous, pierced at the apex, mostly papillate, superficial or erumpent, without any stroma; sporidia simple or septate, hyaline, or coloured, variable. (*Fig.* 393.)

Series A.	Perithecia free	<i>Superficiales.</i>	853
B.	Perithecia covered, then erumpent and naked	<i>Erumpentes.</i>	871
C.	Perithecia at first innate, then erumpent above	<i>Subtectæ.</i>	877

A. SUPERFICIALES.

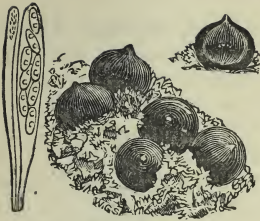


Fig. 393.

Simple. Perithecia bicorticate, seated on an effused villous subiculum, or superficially on the flattened matrix, free, at first veiled.—*Fr. S.M.* ii. p. 321.

a. *Byssisedæ*.

Perithecia smooth, seated on a tomentose subiculum.—*Fr. S.M.* ii. p. 322.

* Sporidia coloured, simple.

2549. Sphæria thelena. *Fr.* "Large nestling Sphæria."

Perithecia confluent, globose, thin, papillate, brown-black, emerging from a purplish evanescent subiculum; sporidia black-brown, opaque, elliptical or slightly curved.—*Fr. S.M.* ii. p. 441. *Fries. exs.* no. 49. *Curr. Linn. Trans.* xxii. t. 57, f. 8. *S. aquila*, *Eng. Fl.* v. p. 259.

On decayed wood. Appin.

Subiculum dense, interwoven, superficial, loosely adherent, indeterminate; perithecia large, even, smooth, wholly emerging from the subiculum, at length confluent, and the subiculum is totally obliterated. Sporidia sometimes with a large nucleus ($\cdot 0009$ in.) $\cdot 022$ m.m.

2550. Sphæria aquila. *Fr.* "Brown nestling Sphæria."

CONIDIA.—Forming a thickened effused subiculum; flocci brown; conidia subglobose, minute.—*Alytosporium fuscum*, *Link. sp. i.* p. 23. *Sporotrichum fuscum*, *Lk. Obs.* i. p. 35. *Fckl. exs.* no. 139.

ASCOPHORE.—Perithecia gregarious, globose, firm, papillate, brown black, emerging from a persistent brown, tomentose, subiculum; sporidia dark brown, almost opaque, almond-shaped or subcymbiform, or oblong.—*Cooke exs.* no. 270. *Fr. S.M.* ii. p. 442. *Berk. Ann. N.H.* no. 180. *Curr. Linn. Trans.* xxii. t. 57, f. 4. *Moug. exs.* no. 965. *Schm. exs.* no. 58. *Tode. f.* 70. *S. byssis-eda*, *Eng. Fl.* v. p. 260. *Rosellinia aquila*, *Tul. Carp.* ii. p. 250, t. 33, f. 1-6. *Fckl. exs.* no. 963. *De Not. Sfer. Ital.* t. v. f. 18.

On rotten sticks. Common.

[United States.]

Sporidia ($\cdot 0006$ – $\cdot 0008$ in.) $\cdot 015$ – $\cdot 02$ m.m.

(Fig. 393.)

2551. Sphæria Desmazierii. *B. & Br.* "Desmazieres' Sphæria."

Subiculum very widely effused, tomentose; perithecia large, nestling, globose, here and there confluent, somewhat scabrous; ostiola papillæform; asci elongated; sporidia elongated-cymbiform, 6-7 nucleate, brown.—*B. & Br. Ann. N.H. no. 618, t. 9, f. 1. Curr. Linn. Trans. xxii. t. 57, f. 2.*

On the ground in woods. Aug.—Oct.

Spreading widely over the ground, fallen leaves, &c., and covering them with a mouse-coloured tomentose subiculum which consists of somewhat branched anastomosing threads, tips often subdivided, forming little racemes, surmounted by oblong conidia. Perithecia large, half immersed in the subiculum, which in age acquires a darker hue, somewhat scabrous, dull pitchy black, or plumbaginous, globose, with a central papillæform ostiolium; asci elongated, clavate; inner membrane, furnished with an oblong process at the tip; sporidia large, cymbiform, elongated, subacuminate, at first hyaline, with two or three variously sized globules, at length dark brown, containing six or seven globose nuclei.—*B. & Br. Sporidia* ('0013 in.) '03 m.m.

** Sporidia coloured, septate.

2552. Sphæria phæostroma. *Mont.* "Large-spored Ground Sphæria."

CONIDIA.—Apical on the threads of the subiculum, oblong, bi-septate, dark-brown.—*Fckl. Sym. Myc. p. 166.*

ASCOPHORE.—Perithecia gregarious, crowded, subovoid, black, rugulose, semi-immersed in a thick, blackish-brown subiculum; asci cylindrical; sporidia cylindrical, slightly curved, triseptate, colourless at each end, clear brown in the middle.—*Mont. Syll. p. 226. D. R. & M. Fl. Alg. t. 26, f. 2. B. & Br. Ann. N.H. no. 605. Curr. Linn. Trans. xxii. t. 57, f. 12. S. tristis, var. β. Eng. Fl. v. p. 260. Chætosphæria phæostroma, Fckl. Sym. Myc. p. 166, t. 2, f. 40. Rabh. F.E. no. 51.*

[Mid. Carolina.]

Sporidia ('0014-'0016) '035-04 m.m.

2553. Sphæria racodium. *Fr.* "Brittle nestling Sphæria."

Perithecia subglobose, rugulose, hairy, black, papillary, emerging from a broad, black, tomentose subiculum; sporidia biseriate, pale brown. 7-septate.—*Fr. S.M. ii. p. 449. Fries. exs. no. 310. Eng. Fl. v. p. 261. Curr. Linn. Trans. xxii. t. 57, f. 15. Berk. exs. no. 283. Lasiosphæria racodium, Fckl. Sym. Myc. p. 147. Fckl. exs. no. 951.*

On decaying wood. Common. [Low. & Mid. Carolina.]

Scattered or densely gregarious, brittle, the base immersed in the matrix, subiculum sometimes present on one part of the wood, and wanting on another. Sporidia ('002-'0026 in.) '05-'06 m.m.

** Sporidia hyaline.
*

2554. Sphæria tristis. *Tode.* "Black nestling Sphæria."

Perithecia crowded, globose, punctato-rugulose, collapsed, mouthless, black, seated on a strigose subiculum; sporidia minute, oblong, curved, bisepate, or trinucleate.—*Tode. f.* 67. *Pers. Ic. & Des. t.* 12, *f.* 5, 6. *Fr. S.M. ii. p.* 444. *Fries. exs. no.* 386. *Eng. Fl. v. p.* 260. *Ann. N.H. no.* 618* 181. *Curr. Linn. Trans. xxii. t.* 57, *f.* 11 (?) *Cooke exs. no.* 269.

On dead sticks.

Resembling at first sight one of the larger *Helminthosporia*. Perithecia minute, collapsing.

2555. Sphæria biformis. *Pers.* "Two-formed Sphæria."

Perithecia subovate, slightly tuberculate, black, clothed with strigose hairs of the same colour; ostiola somewhat elongated.—*Pers. Syn. t.* 2, *f.* 14. *Ic. Pict. t.* 24, *f.* 4. *Fr. S.M. ii. p.* 448. *Eng. Fl. v. p.* 261.

On wood.

var. β. terrestris. Perithecia crowded, seated upon a crust-like, strigoso-villous subiculum. *Sow. t.* 373, *f.* 7. *Eng. Fl. v. p.* 261.

On the naked earth.

2556. Sphæria investans. *Cooke.* "Investing Sphæria."

Gregarious, or scattered, globose, papillate, brown-black, erumpent, throwing off the cuticle, seated upon, and at first covered by a dirty-brown woolly subiculum, at length the upper portion of the perithecia naked; sporidia broadly lanceolate, uniseptate, of two opposed cones, constricted at the septum, surrounded by a broad hyaline membrane, each cell with a large basal, and small apical nucleus, hyaline.

On rotten twigs. Shere. (Dr. Capron.)

The outline of the investing membrane of the sporidia is broadly lanceolate, and not constricted, length ('0008-'0009 in.)

b. *Villosæ.*

Perithecia persistently hairy.—*Fr. S.M.* ii. p. 322.

* Sporidia coloured.

2557. Sphæria ovina. *Pers.* "Woolly Sphæria."

Perithecia subglobose, clothed with dirty-white, mucedinous down, naked at the base; ostiolum papillate, at length black; sporidia biseriate or crowded, pale brown, long, flexuous.—*Pers. Syn.* p. 71. *Fr. S.M.* ii. p. 446. *Fries. exs.* no. 149. *Eng. Fl.* v. p. 260. *Curr. Linn. Trans.* xxii. p. 316. *S. nivea*, *Sow. t.* 219. *Lep- tospora ovina*, *Fckl. Sym. Myc.* p. 143. *Fckl. exs.* no. 788.

On decayed wood.

[Mid. Carolina.]

2558. Sphæria brassicæ. *Klotsch.* "Cabbage Sphæria."

Perithecia conical, their bases innate, clothed with dirty-white arachnoid down; ostiola naked, simple, jet-black; sporidia colourless, then pale brown, ultimately dark opaque brown, elliptical, with pointed ends or lozenge-shaped.—*Eng. Fl.* v. p. 261. *Curr. Linn. Trans.* xxii. t. 57, f. 23.

On dead cabbage stalks.

Sporidia (·0014-·002 in.) ·03-·05 m.m. long. Perithecia large, hairy at the bottom, hairs white or brown, sporidia sometimes with two large nuclei, sometimes with a dark line not extending quite across the sporidium.—*F. C.*

2559. Sphæria hirsuta. *Fr.* "Hairy Black Sphæria."

CONIDIA.—Gregarious, stem rigid, persistent, black; head subrotund, at length compact, greyish.—*Stilbum rigidum*, *Pers. Syn.* p. 680. *Fckl. exs.* no. 177.

ASCOPHORE.—Perithecia subglobose, and ovate, tuberculate, black, covered with scattered hairs of the same colour; ostiolum obsolete; sporidia biseriate or crowded, pale brown, long, flexuous.—*Fr. S.M.* ii. p. 449. *Eng. Fl.* v. p. 262. *Curr. Linn. Trans.* xxii. t. 57, f. 18. *Lasiosphæria hirsuta*, *Fckl. Sym. Myc.* p. 147, t. 3, f. 32. *Fckl. exs.* no. 950.

var. *β. acinosa.* Perithecia globose and subdepressed, black-brown.—*Batsch. f.* 179. *Sow. t.* 386, f. 3?

On decayed wood.

Sporidia (·002-·0026 in.) ·05-·06 m.m.

2560. Sphæria hispida. Tode. "Hispid Sphæria."

SPERMOGONIA.—Perithecia irregularly clavate, cylindrical, or dilated at the base, greenish yellow or pallid; spermatia minute, ovate, hyaline.—*Sphæronema flavo-viride*, *Fckl. exs. no. 774*.

ASCOPHORE.—Black; perithecia ovato-conic, confluent with the ostiola, clothed with short, scattered hairs; sporidia cylindrical, vermiculate, 7-8 septate, obtuse, umber; cells nucleate.—*Tode. f. 84. Fr. S.M. ii. p. 450. Eng. Fl. v. p. 262. Sphæria terrestris, Fckl. exs. no. 949, 2039. Sph. lignaria, Grev. t. 82? Lasiosphæria hispida, Fckl. Sym. Myc. p. 147, t. 3, f. 31.*

On decayed wood. Appin.

If the specimen of *S. lignaria* examined by Mr. Currey (*Linn. Trans. xxii. t. 58, f. 66*) belongs to this species the fruit is very different, as follows—"sporidia uniseriate, at first pale brown, then dark brown, elliptico-acuminate '0005 in. long."

2561. Sphæria capillifera. Curr. "Stiff Hairy Sphæria."

Perithecia globose, clothed with very short, rather stiff black hair, seated on a pale subiculum; ostiola mamillate; sporidia uniseriate, rather dark brown, broadly elliptical, 1-2 nucleate.—*Curr. Linn. Trans. xxii. p. 317. t. 57, f. 26.*

On *Corticium* and subjacent wood.

Sporidia ('0003-'0004 in.) '0076-'01 m.m.

2562. Sphæria scatigena. B. & Br. "Satiny Sphæria."

Perithecia free, ovate, finely hispid, hairs short, rigid; ostiola papillæform, truncate at the apex; sporidia subglobose.—*B. & Br. Ann. N.H. no. 972, t. 17, f. 25.*

On horse dung. King's Cliffe.

Perithecia free, ovate, rough, with very short rigid hairs; ostiolum papillæform, truncate, asci cylindrical; sporidia uniseriate, broadly elliptic, subglobose, at first surrounded with gelatine ('0008 in.) '02 m.m. long, flattened, so that a lateral view gives a narrow elliptic outline.—*B. & Br.*

* Sporidia hyaline, simple.

2563. Sphæria cæsia. Carm. "Grey woolly Sphæria."

Perithecia white, very hairy; sporidia uniseriate, colourless, elliptical, or subpyriform.—*Curr. Linn. Trans. xxii. p. 316, t. 57, f. 17.*

On wood.

Sporidia ('0002 in.) '005 m.m. long.

2564. Sphæria canescens. *Pers.* "Hoary Sphæria."

Perithecia aggregate, globose and ovate, hairy, papillate, hoary; sporidia colourless, straight, or curved, subacuminate.—*Pers. Syn.* ii. p. 448. *Fr. S.M.* ii. p. 261. *Fries. exs.* no. 50. *Eng. Fl.* v. p. 261. *Curr. Linn. Trans.* xxii. t. 57, f. 14. *Berk. exs.* no. 301.

On decayed wood.

[Low. Carolina.]

Perithecia forming a dense stratum of a cinereous brownish or greenish hue, very hairy, brittle. Sporidia (·0011-·0014 in.) ·025-035 m.m. long.

2565. Sphæria strigosa. *A. & S.* "Bristly Sphæria."

Perithecia aggregate, globose and ovate, papillary, beset all round with long, rigid, hoary hairs; sporidia elongated, somewhat curved, pale tawny, simple.—*Fr. S.M.* ii. p. 448. *A. & S. t.* 5, f. 7. *Eng. Fl.* v. p. 261. *Leptospora strigosa*, *Fckl. Sym. Myc.* p. 144. *Sph. mucida*, *Fckl. exs.* no. 948.

On decayed wood.

[Low. & Mid. Carolina.]

Distinguished from *S. canescens* by its closer habit, and tough, not brittle substance. The hairs of both, though giving the perithecia a hoary appearance, are not always white, but frequently of a brownish or yellowish hue.—*M.J.B.* Mr. Currey does not think the two species distinguishable.

2566. Sphæria exilis. *A. & S.* "Hairy Pine Sphæria."

Black, very minute; perithecia globose, then depressed, at length collapsed, concave, astomous, clothed with short hairs; sporidia cylindrical, curved, simple, hyaline.—*A. & S. t.* 9, f. 4. *B. & Br. Ann. N.H.* no. 606. *Fckl. exs.* no. 2023. *Nitschkia exilis*, *Fckl. Sym. Myc.* p. 165.

On pine twigs. Wraxall.

[Low. Carolina.]

2567. Sphæria superficialis. *Curr.* "Currey's Hairy Sphæria."

Perithecia hairy, subglobose, very small, seated on a hairy subiculum; sporidia uniseriate, overlapping, elliptical, or sub-turbinate, rarely slightly curved, colourless.—*Curr. Linn. Trans.* xxii. p. 317, t. 57, f. 25.

On fir wood.

Sporidia (·0003-·0004 in.) ·0076-·01 m.m. binucleate.

2568. Sphæria calva. *Tode.* "Tode's Hairy Sphæria."

Perithecia scattered, depresso-globose, papillary, even, black,

beset below with short hispid hairs, above smooth and shining.
—*Tode f.* 83. *Fr. S.M.* ii. p. 451. *Eng. Fl.* v. p. 262.

On decayed wood and branches.

** Sporidia hyaline, septate or nucleate.
*

2569. Sphæria mutabilis. *Pers.* "Changeable Sphæria."

Perithecia subglobose, covered with a yellow or greenish, then ferruginous down; ostiola subpapillæform, blackish; sporidia biseriate, colourless, curved, acuminate; endochrome 4 partite.
—*Pers. Ic. & Desc.* t. 7, f. 6. *Fr. S.M.* ii. p. 447. *Sturm.* t. 64. *Curr. Linn. Trans.* xxii. t. 57, f. 20.

On hard wood, oak, &c.

[Mid. Carolina.]

Sporidia (.0008 in.) .02 m.m. long.

2570. Sphæria scabra. *Curr.* "Rough Furze Sphæria."

Perithecia very hairy, seated on a dense subiculum, erumpent; sporidia biseriate, fusiform, constricted in the middle, colourless, with many nuclei.—*Curr. Linn. Trans.* xxii. p. 315, t. 57, f. 13.

On furze. Oct. Weybridge.

Sporidia (.0012-.0014 in.) .03-.035 m.m. long.

2571. Sphæria callimorpha. *Mont.* "Hairy Bramble Sphæria."

Perithecia minute, gregarious, globoso-depressed, ovoid, even, black, shining, papillate, surrounded by erect, black hairs; sporidia cymbiform, triseptate.—*Mont. Syll.* p. 227. *B. & Br. Ann. N.H.* no. 872. *Mont. Ann. des Sc. Nat. ser. ii. vol. i.* p. 306, t. 13, f. 5.

On bramble. Leicestershire.

It is doubtful whether this is really distinct from *S. ruborum*, Lib. M. Westendorp unites them, but we have never examined an authentic specimen of Montagne's.

2572. Sphæria macrotricha. *B. & Br.* "Long-haired Sphæria."

Subiculum creeping; perithecia ovate, clothed below with long hairs, attenuated above and naked, collapsing with the papillæform ostiola; asci clavate; sporidia fusiform, uniseptate, 6-nucleate.—*B. & Br. Ann. N.H.* no. 619, t. 9, f. 2.

On dead leaves of *Carex paniculata* and Beech mast.

Brown or nearly black, subiculum effused, consisting of interwoven, creeping hairs. Perithecia crowded, ovate, clothed with long hairs, attenuated, and more or less denuded above, and when dry collapsing with their papillæform ostiolum. Sporidia biseriate, fusiform, consisting of two opposed cones constricted at the juncture, and sometimes above the first nucleus, each division containing one or more globules.—*B. & Br.*

2573. Sphæria pilosa. *Pers.* "Velvety Sphæria."

Black; perithecia minute, roundish-ovate, nearly even, beset with short hairs; ostiola simple; sporidia colourless, elliptical, uniseptate, or with the endochrome bipartite.—*Pers. Ic. & Desc. t. 10, f. 9, 10. Fr. S.M. ii. p. 450. Eng. Fl. v. p. 262. Curr. Linn. Trans. xxii. t. 57, f. 21. B. & Br. Ann. N.H. no. 1096*. Fckl. exs. no. 946?*

On decayed wood. Common. [Low. Carolina.]

A small species, like *S. pulvis-pyrius*, but decidedly hairy. Sporidia (.0003-.0004 in.) .0076-.01 m.m. "We have observed oblong conidia, rather irregular in outline, terminating the hairs. The asci in the same specimens, besides the eight linear, oblong, somewhat sigmoid sporidia had at the tip a globose, smooth, or slightly granulated body (.0003 in.) .0076 m.m. in diameter, the nature of which we were unable to determine."—*B. & Br.*

2574. Sphæria sexdecemspora. *Cooke.* "Sixteen-spored Sphæria."

Scattered; perithecia small, ovate, beset with rigid, erect hairs (at first covered, then bursting through the cuticle), black; ostiola prominent; asci elliptical; sporidia sixteen, crowded, broadly lanceolate, 3-5 septate, with transverse divisions, hyaline.

On twigs. Shere. (Dr. Capron.)

This pretty little *Sphæria* is very distinct from its allies. It is included doubtfully with the *Villosæ*; there is no subiculum, and only occasionally the perithecia are wholly exposed. Sometimes there are more than five septa in the sporidia, which are very variable in size.

c. Denudatæ.

Subiculum none; perithecia smooth, rounded at the base, nearly free; ostiolum persistent; adnate, superficial.—*Fr. S.M. ii. p. 322.*

* Sporidia hyaline.

2575. Sphæria bombarda. *Batsch.* "Clustered naked Sphæria."

Fasciculate, black-brown; perithecia elongated, soft, ventricose; ostiolum papillæform; sporidia crowded, colourless, inter-

twined, variable, frequently divided in the middle.—*Batsch. f.* 181. *Hedw. Crypt. t.* 38. *Fr. S.M. ii. p.* 456. *Fries. exs. no.* 266. *Eng. Fl. v. p.* 264. *Berk. Outl. t.* 24, *f.* 5. *Curr. Linn. Trans. xxii. t.* 57, *f.* 29. *Berk. exs. no.* 268. *S. reptans*, *Sow. t.* 395, *f.* 1. *Bombardia fasciculata*, *Fckl. Sym. Myc. p.* 164. *Fckl. exs. no.* 940.

On rotten stumps.

Sporidia (·0016-·0020 in.) ·035-·05 m.m.

“Apparently varying much in the length of the ostiolum. I have seen once or twice a bead-like appearance in the sporidia, arising from the breaking up of the endochrome into divisions, I suspect it may sometimes be multiseptate.”—*F.C.*

2576. Sphæria spermoides. *Hoffm.* “Crowded naked Sphæria.”

Densely crowded, black; perithecia rigid, globose, minutely rugulose; ostiola absolutely papillæform; sporidia biseriate, colourless, curved; endochrome sometimes bipartite.—*Hoffm. V. C. t.* 3, *f.* 3. *Moug. exs. no.* 486. *Fr. S.M. ii. p.* 457. *Curr. Linn. Trans. xxii. t.* 57, *f.* 36. *Eng. Fl. v. p.* 265. *Fries exs. no.* 237. *Grev. t.* 6. *Light t.* 31. *S. bombardica*, *Bolt. t.* 122. *Sow. t.* 372, *f.* 4. *Leptospora spermoides*, *Fckl. Sym. Myc. p.* 143. *Fckl. exs. no.* 939. *Leptospora pseudo-spermoides*, *Awd. Fckl. exs. no.* 2175.

On rotten stumps. Common. [Mid. Carolina.]

Spreading for several inches in a continuous crust, rarely scattered. Sporidia (·0008 in.) ·02 m.m.

2577. Sphæria moriformis. *Tode.* “Mulberry Sphæria.”

Crowded, black; perithecia obovate, corrugato-tuberculate; ostiolum simple; sporidia crowded, uniseptate, colourless, linear, slightly curved, granular.—*Tode. f.* 90. *Moug. exs. no.* 382. *Fr. S.M. ii. p.* 458. *Fries exs. no.* 125. *Eng. Fl. v. p.* 265. *Curr. Linn. Trans. xxii. t.* 57, *f.* 30. *S. claviformis*, *Sow. t.* 337. *S. rugosa*, *Grev. t.* 39. *S. rubiformis*, *Sow. t.* 373, *f.* 2. *Bertia moriformis*, *Fckl. Sym. Myc. p.* 164. *Fckl. exs. no.* 999.

On wood, branches, &c. [United States.]

Very variable in form.

2578. Sphæria innumera. *B. & Br.* “Numerous Sphæria.”

CONIDIA.—Thinly effused, at first bright green, then olivaceous; conidia very copious, globose, dull greenish.—*Sporotrichum virescens*, *Link. Sp. 1, p.* 16. *Dematium virescens*, *Pers. M. E. t. 1, p.* 14. *Fr. S.M. iii. p.* 363.

ASCOPHORE.—Perithecia produced amongst the conidiophorous threads, numerous, black, shining, globose, scarcely papillate; asci linear-clavate; sporidia straight, oblong-lanceolate, pellucid, with two or three nucleoli, at length biseptate.—*B. & Br. Outl.* p. 395. *Chaetosphaeria innumera*, Tul. *Carp.* ii. p. 253.

On wood.

Sporidia '013 m.m. long, '004 m.m. thick.

2579. Sphæria botryosa. Fr. "Granular Sphæria."

Cæspitose or conglomerated, rounded; perithecia globose, connate, rugose, opaque, black, depressed at the apex; asci clavate, containing an indefinite number of very minute granules.—*Fr. S.M.* ii. p. 342. *Fries. exs.* no. 112. *Curr. Linn. Trans.* xxii. t. 46, f. 46. *Fckl. exs.* no. 959. *Hypoxylon botrys*, Nke. *Pyr. Germ.* p. 34. *Fckl. Sym. Myc.* p. 234.

"Granules colourless, about ('0001 in.) '0025 m.m., endowed with Brownian motion. I should have doubted these granules being true sporidia, but I find this fruit coinciding exactly with that of authentic specimens from the *Scleromycetes suecicæ*. Fries considers the plant a *Sphæria*, with confluent perithecia, but not an *Hypoxylon*."—*F.C.* Nitschke calls the sporidia ovate, obtuse, unequilateral.

2580. Sphæria pomiformis. Pers. "Apple-shaped Sphæria."

Rather small, black; perithecia apple-shaped, even, with an impressed ring round the papillæform ostium; sporidia ovate, or ovate-oblong, obtuse, bilocular, slightly constricted, hyaline, or pale brown.—*Pers. Syn.* p. 65. *Ic. Pict.* t. 5, f. 4, 5. *Moug. exs.* no. 482. *Fr. S.M.* ii. p. 455. *Fries. exs.* no. 236. *Eng. Fl.* v. p. 264. *Fckl. exs.* no. 938. *S. corona*, Sow. t. 393, f. 7. *Melanomma pomiformis*, *Fckl. Sym. Myc.* p. 159.

On dead wood.

[Low. Carolina.]

Perithecia globose, rather thin, but slightly rigid, and in consequence collapsed only at the apex.

2581. Sphæria rhytidodes. B. & Br. "Sulcate Sphæria."

Gregarious, black; perithecia seated on a spot-like mycelium, subglobose, rugoso-sulcate; ostiola papillæform; asci elongated; sporidia biseriate 3-6 septate, torulose.—*B. & Br. Ann. N.H.* no. 873, t. 10, f. 21.

On ash pollards. Jan. Batheaston.

Mycelium black, forming dark stains, on which are seated subglobose, laterally sulcate perithecia, with a papillæform ostium. Asci elongato-clavate. Sporidia biseriate ('001-'0013 in.) '025-'03 m.m. long, cymbiform.

2582. Sphæria perexigua. *Curr.* "Rough little Sphæria."

Crowded, black; perithecia sub-globose, rugose; sporidia biseriate, colourless, or greenish, subelliptical, slightly curved, endochrome bipartite.—*Berk. Outl.* p. 396. *S. pustula*, *Curr. Linn. Trans.* xxii. p. 317, t. 57, f. 31.

On wood. Bungay.

Very like *S. pulvis-pyrius*, except in the sporidia, which are ($\cdot 0008\text{--}\cdot 001$ in.) $\cdot 02\text{--}\cdot 025$ m.m.

2583. Sphæria ordinata. *Fr.* "Long-line Sphæria."

Crowded in an elongated series, red-brown; perithecia minute, soft, subfibrillose at the base; asci clavate; sporidia biseriate, curved, fusiform, multiseptate.—*Fr. S.M.* ii. p. 454. *B. & Br. Ann. N.H.* no. 973, t. 17, f. 26.

On decorticated fallen oak branches. Dec.

Perithecia scattered or aggregated, arranged in lines, ovate, with a papillary orifice, rusty brown, becoming black, covered at first with a tomentose veil, sometimes regularly attenuated, resting on a brownish friable mycelium. Asci clavate. Sporidia biseriate, curved, fusiform, hyaline, multiseptate ($\cdot 0015$ in.) $\cdot 035$ m.m. long, sometimes shorter.—*B. & Br.*

2584. Sphæria ruborum. *Lib.* "Bramble Sphæria."

Perithecia globose, or subglobose, with a mamillate ostiolum, covered and nestling amongst stiff, dark, scattered hairs; sporidia biseriate, colourless, subcymbiform, or narrowly almond-shaped, nucleate, or pseudo-septate.—*Lib. exs.* no. 340. *Cooke Seem. Journ.* 1866. *Cooke exs.* no. 385. *Sph. rubicola*, *Curr. Linn. Trans.* xxii. t. 57, f. 48.

On bramble. Oct.

Sporidia ($\cdot 0006\text{--}\cdot 0007$ in.) $\cdot 015\text{--}\cdot 0177$ m.m. with 2 or 4 nuclei, or sometimes with the endochrome divided into two parts. *M. Westendorp* refers *S. ruborum*, *Lib.* to *S. callimorpha*, *Mont.*

2585. Sphæria paucipilis. *Cooke.* "Few-haired Sphæria."

Perithecia gregarious, small, black, globose, with a few scattered hairs, which are also scattered over the matrix; ostiolum slightly papillate; asci narrowly clavate; sporidia biseriate, lanceolate, 3-5 septate, with a large globose nucleus in each cell, except the terminal ones, hyaline.

On rotten sticks. Wootton Wood. (Dr. Capron.)

The habit is very similar to that of *Sphæria ruborum*, overrunning irrespectively the naked wood, and the fragments of bark still adherent thereto. Asci $\cdot 0034$ in. long. Sporidia ($\cdot 0006\text{--}\cdot 0008$ in.) $\cdot 015\text{--}\cdot 02$ m.m. long.

2586. Sphæria collabens. Curr. "Collapsing Sphæria."

Perithecia subglobose, with an impressed ostiolum, which is often furrowed or rimose; sporidia biseriate, fusiform, swollen, or constricted in the middle, with several nuclei, colourless.—*Curr. Linn. Trans.* xxii. p. 320, t. 58, f. 51.

On bark and wood.

Sporidia (·0014-·0016 in.) ·03-·04 m.m. The sporidia and perithecia agree nearly with *S. macrotricha*, but the perithecia have no hairs, the habitat is also different. The sporidia resemble also those of *S. scabra*, but, besides being smooth, the perithecia are four times the size of those of *S. scabra*.—*F.C.*

var. Curreyi. Blox. Contents of perithecia rose-red; sporidia rarely exceeding ·0010 in. in length.—*Sphæria Curreyi, Blox. Curr. Linn. Trans.* xxii. p. 320. *Berk. Outl.* p. 396.

There does not appear to be sufficient reason to regard this form as a distinct species.

2587. Sphæria pulviscula. Curr. "Powdery Sphæria."

Perithecia very small, black, rather shining, conical or subglobose, crowded or scattered; ostiolar minute, mamillate; sporidia curved, or cymbiform, colourless, triseptate.—*Curr. Linn. Trans.* xxii. p. 320, t. 58, f. 52.

On wood.

Sporidia biseriate, curved or cymbiform, colourless or greenish, when perfect with three septa, or at least with the endochrome divided into four portions, giving an appearance of three septa, sometimes the endochrome is only once divided, and in a young state the sporidia are continuous. Length variable (·0008-·0012 in.) ·02-·03 m.m.—*F.C.*

* Sporidia coloured.

2588. Sphæria confluens. Tode. "Confluent Sphæria."

Perithecia subglobose, rugulose, seriato-confluent, black, depressed around the ostiolar.—*Tode t.* 10, f. 87. *B. & Br. Ann. N. H.* no. 597. *Fr. S.M.* ii. p. 342. *Fckl. exs.* no. 2177.

On decayed wood, as oak, willow, &c. Bristol.

Fuckel states that the sporidia are oblong, nearly straight, brown; and refers it to *Hypoxylon udum*.

2589. Sphæria mammæformis. Pers. "Mamillate Sphæria."

Large, black; perithecia thin, globose, even; ostiolar papillæform; sporidia dark, clear brown, subcymbiform, variable in

size.—*Pers. Syn. p. 64. Ic. Pict. t. 5, f. 6, 7. Moug. exs. no. 380. Fr. S.M. ii. p. 455. Fries exs. no. 387. Eng. Fl. v. p. 264. Curr. Linn. Trans. xxii. t. 57, f. 37. Rosellinia mammæformis, Fckl. Sym. Myc. p. 149. Hypoxylon globulare. Bull. t. 444, f. 2. Fckl. exs. no. 1060.*

On decayed sticks, &c.

[Low. & Mid. Carolina.]

Much larger than *S. pomiformis*, and though sometimes slightly depressed, not collapsing; sporidia (·0008-·0016 in.) ·02-·035 m.m.

2590. Sphæria obducens. Fr. "Naked Rail Sphæria."

Crowded, small, black; perithecia ovato-rotund, unequal, rigid; ostiola subpapillæform; sporidia crowded, yellowish-brown, multipartite, subelliptical.—*Fries. exs. no. 119. Berk. exs. no. 177. Mag. Zool. & Bot. no. 100. Fr. S.M. ii. p. 456. Tul. Carp. ii. p. 245, t. 28, f. 4-13. Fckl. exs. no. 2024. Cucurbitaria miskibutris, De Not. Act. Tur. (1853), p. 126. S. plateata, Curr. Linn. Trans. xxii. t. 57, f. 35. Trichospora obducens, Fckl. Sym. Myc. p. 161.*

On pales. Apethorpe.

Very like *S. pulvis pyrius*, except in the sporidia, which are (·0008-·0010 in.) ·02-·025 m.m.

2591. Sphæria pulvis-pyrius. Pers. "Gunpowder Sphæria."

Crowded, black; perithecia ovato-globose, rugose, sulcate in the middle; sporidia straight, or slightly curved, triseptate, slightly constricted, pale brown.—*Pers. Syn. p. 86. Fr. S.M. ii. p. 458. Fries exs. no. 120. Grev. t. 152. Cooke. exs. no. 379. Eng. Fl. v. p. 265. Moug. exs. no. 381. Curr. Linn. Trans. xxii. t. 57, f. 32. Fckl. exs. no. 937. (Fr. El. ii. p. 82. Eng. Fl. v. 253, including *S. dioica*, Moug. exs.) Melanomma pulvis pyrius, Fckl. Sym. Myc. p. 160.*

On old wood, bark, &c. Common. [Low. & Mid. Carolina.]

Sometimes crowded, at others scattered and naked, rarely subcuticular. Distinguished without difficulty from *S. moriformis* by its much smaller size, less tuberculate surface, and subrimose ostiolum. Sporidia (·0005 in.) ·0127 m.m.

2592. Sphæria epochnii. B. & Br. "Olive-patch Sphæria."

CONIDIA.—Flocci effused, very delicate; conidia pellucid, dark-green, elongated, triseptate, incrassated at the apex.—*Sporidesmium fungorum, Berk. Outl. p. 327. Sporidesmium atrum,*

Grev. t. 194. Epochnium fungorum, Fr. S.M. iii. p. 449. Eng. Fl. v. p. 352.

ASCOPHORE.—Perithecia at first conical, then subglobose, collapsed, crowded, olive-black, granulated; asci clavate; sporidia uniseriate, fusiform, constricted in the middle, at length triseptate, pale-brown.—*B. & Br. Ann. N.H. 1866, no. 1177, t. 5, f. 36.*

On *Corticia*, &c. March.

The *Epochnium* forms a thin stratum, which overruns various species of *Corticium*. The conidia are at first uniseptate. Perithecia at first pale bottle-green, crowded in the centre of the *Epochnium*, then black-green, granulated, sometimes depressed at the summit, with a minute pore. Asci clavate, containing a single row of triseptate fusiform. Sporidia (·001·0011 in.) ·025·03 m.m. long, strongly constricted in the centre, at length pale brown. The sporidia are at first uniseptate, with two nuclei in each division.—*B. & Br.*

* * Sporidia ovoid, simple, dark-coloured, sometimes caudate
= *Sordaria, De Not.*

2593. Sphæria sporormia. *Cooke.* "Four-jointed dung
Sphæria."

At first covered, then emergent, scattered, punctiform; perithecia ovoid, collapsing, shining, black; sporidia biseriate, dark opaque, rich brown, consisting of four joints, which frequently separate when the sporidia escape from the ascus.—*Sphæria stercoris, Fr. El. ii. p. 104. S. stercoraria, Fr. S.M. ii. p. 455. Curr. Linn. Trans. xxii. t. 57, f. 40. Fckl. exs. no. 903. Sporormia intermedia, Awd. in. Hedw. 1868, p. 67 (not Hypocopra stercoris, Fckl.)*

On dung. Shere. (Dr. Capron.)

Sporidia (·0018 in.) ·04 m.m. long. This can scarcely be regarded as belonging to the present section of simple-spored species.

2594. Sphæria coprophila. *Fr.* "Cow-dung Sphæria."

Effused; perithecia subglobose, connate, or scattered, covered with a thin, evanescent, whitish tomentum, at length naked, black; papillæ globose, black; asci clavate; sporidia ellipsoid, opaque, with a hyaline appendage, twice as long as the sporidia.—*Fr. S.M. ii. p. 342. B. & Br. Ann. N.H. no. 596. Hypoxylon coprophilum, Fr. S.V.S. p. 384. Fckl. exs. no. 1057. Sph. incana, Steph. Ann. N.H. ser. i. vol. iv. p. 252. Sordaria coprophila, De*

Not. Sfer. Ital. no. 20. *Fckl. Sym. Myc.* p. 244. *Rabh. exs.* no. 257. *Ces. Hedw. t.* xiv. *B. f.* 2-5.

On cow dung, in dense patches. Bristol, &c.

[United States.]

The above description of the fruit does not correspond with that of the Rev. M. J. Berkeley, who states that the sporidia are filiform, flexuous, containing a row of nuclei. This applies possibly to the immature sporidia only.

2595. Sphæria stercoraria. *Sow.* "Naked Dung Sphæria."

Black, shining; perithecia globose, rigid, even; ostium papilliform; sporidia uniseriate, brown, eventually quite opaque, elliptical or almond-shaped.—*Sow. t.* 357, *f.* 1. *Fr. S.M.* ii. p. 455. *Eng. Fl.* v. p. 264. *Curr. Linn. Trans.* xxii. t. 57, *f.* 38. *Rabh. F.E.* no. 830. *Hypocopa stercoraria*, *Fckl. Sym. Myc.* p. 241.

On dung.

Rather large, firm, thick, not collapsing; perithecia are immersed in a decided stroma even when solitary. Sporidia (·0012 in.) ·03 m.m.

2596. Sphæria fimicola. *Rob.* "Asses' Dung Sphæria."

Perithecia solitary, or few together; ostiola penicellate; sporidia elliptic, brown, with a large oil globule, green when young.—*Desm. exs.* no. 2061. *B. & Br. Ann. N.H.* no. 1097. *S. stercoraria*, *var. Curr. Linn. Trans.* xxii. t. 57, *f.* 39.

On asses' dung. Rhyl.

Delicate, linear, stylospores occur at the mouth of the perithecia (·0007 in.) ·017 m.m. long. Sporidia (·0006-·0008 in.) ·015-·02 m.m. long (·0004 in.) ·01 m.m. broad. "Ostiola formed of a number of processes arranged in a penicellate manner, each consisting of a single row of irregularly shaped cells, the upper cell being pointed. Sporidia mostly uniseriate, greenish at first, then darker, probably eventually black, elliptical, ·0010 in. long."—*F. C.*

2597. Sphæria papaverea. *B. & Br.* "Poppy-head Sphæria."

Crowded; perithecia globose, areolate and covered with a white veil, except the ostiola; ostiola large, plane, orbicular, radiato-sulcate; mouth round; sporidia elliptic, subnavicular, brown.—*B. & Br. Ann. N.H.* no. 612, t. 7, *f.* 14.

On rotten stumps. March. Batheaston.

Widely effused, crowded, springing from a brown mycelium; perithecia globose, black, finely areolated, covered, with the exception of the orbicular multisulcate ostium, with a white filmy veil; asci linear; sporidia elliptic, navicular, brown. The ostium resembles the stigma of a poppy, being separated by an abrupt line from the perithecium; the perithecia, though crowded, do not form a confluent mass, but are distinct.—*B. & Br.*

2598. Sphæria rotula. Cooke. "Wheel-like Sphæria."

Gregarious or scattered; perithecia globose, dark-brown, slightly woolly or smooth, opaque; ostiola cylindrical, prominent, radiato-sulcate, black; sporidia broadly ovate, slightly acuminate, dark-brown, simple, opaque.—*Cooke exs. no. 268.*

On the ground. Near Shere, Surrey.

Scattered, or in groups on ground containing minute fragments of decaying wood, in company with a hispid Sphæria. Perithecia small, globose, dark-brown, with a broad, prominent, cylindrical ostiolum, which is black and radiato-sulcate, somewhat after the manner of *S. papavera*, but the perithecia are not in the least areolate, and the prominent ostiola are fluted down to the perithecium. The sporidia are longer and three times as broad as those of *S. papavera*.

2599. Sphæria sordaria. Fr. "Rough naked Sphæria."

Sub-emergent, gregarious, black; perithecia globose, soft, collapsing, rugulose, confluent with the obsolete ostiolum; sporidia uniseriate, dark-brown, elliptical.—*Fr. S.M. ii. p. 458. Fries. exs. no. 270. Eng. Fl. v. p. 265. Curr. Linn. Trans. xxii. t. 57, f. 43.*

On moist pine wood. Appin.

Gregarious, minute, often disposed in rows. To the naked eye presenting little more than a black scurfy stain. Sporidia (·0006-·0007 in.) ·015-·0177 m.m.

2600. Sphæria pulveracea. Ehr. "Dust-like Sphæria."

PYCNIDIA.—Crowded, black, shining, minute, ovato-globose, even, slightly mamillate; stylospores ovate, or ovate-oblong, simple, brown.—*Sphæria myriocarpa, Fr. S.M. ii. p. 459. Fr. exs. no. 313. Eng. Fl. v. p. 266. Grev. t. 152, f. 1. Cooke exs. no. 373.*

ASCOPHORE.—Crowded, small, black; perithecia subovate, rugulose, rigid; ostiolum distinct, pierced; sporidia uniseriate, dark-brown, elliptical, subglobose, or subturbinate.—*Fckl. exs. no. 936. Curr. Linn. Trans. xxii. t. 57, f. 42. Pers. Sym. p. 83. Fr. S.M. ii. p. 459. Fries. exs. no. 121. Eng. Fl. v. p. 265. Moug. exs. no. 773. S. millegrana, Schweinitz. Rosellinia pulveracea, Fckl. Sym. Myc. p. 149.*

On dry wood.

[United States.]

Smaller than *S. pulvis pyrius*, surface unequal but not tuberculate, easily distinguished by the ostiolum. Perithecia rigid, rather shining, crustaceo-aggregate.—*Fries.* Sporidia (·0003-·0004 in.) ·0075 ·01 m.m.

2601. Sphæria moroides. Curr. "Blackberry Sphæria."

Perithecia rugose, small; sporidia biseriate, greenish-brown, then brown, subhyaline, elliptical.—*Curr. Linn. Trans. xxii. p. 318, t. 57, f. 34.*

On wood.

Like very small specimens of *S. moriformis*, but differing altogether in the fruit.

2602. Sphæria vesticola. *B. & Br.* "Garment Sphæria."

Perithecia gregarious, ovate, oblique, attenuated above, somewhat clothed below; asci linear; sporidia lemon-shaped, black.—*Ann. N.H. no. 874.*

On the lining of an old gown. Dec. Batheaston.

Perithecia gregarious, olive-black, ovate, attenuated above, oblique, rough below with a few obscure flocci or furfuraceous prominences; asci linear; sporidia at first concatenated, then free, lemon-shaped (.0007 in.) .0177 m.m. long, germinating at either extremity. The asci are soon absorbed.—*B. & Br.*

2603. Sphæria caudata. *Curr.* "Tail-spored Sphæria."

Perithecia small, scattered, or few together, conical or subglobose, with a conical ostiolum; sporidia biserial, with a pointed, subelliptical brown head, and an elongated colourless tail.—*Curr. Linn. Trans. xxii. p. 320, t. 58, f. 50.*

On rotten wood. Twycross.

This species is very peculiar in the form of its sporidia, the length of which, including the tail, is (.002 in.) .05 m.m., or of the head alone (.0008 in.) .02 m.m. The perithecia are sometimes naked, sometimes almost buried in the soft rotten wood.—*F. C.*

d. *Pertusæ.*

Perithecia smooth, flattened at the base, sub-innate, pierced, innato-superficial.—*Fr. S.M. ii. p. 322.*

2604. Sphæria pertusa. *Pers.* "Pierced Sphæria."

Scattered, black; perithecia emergent, conic, subrugose, pierced by the falling off of the conic ostiolum; asci clavate; sporidia biserial, oblong-lanceolate, subconstricted, uniseptate, quadrinucleate.—*Fr. S.M. ii. p. 464. Fries. exs. no. 389. Eng. Fl. v. p. 266. Fckl. exs. no. 931. B. & Br. Ann. N.H. no. 878, t. 10, f. 25. Curr. Linn. Trans. xxii. t. 58, f. 53. Trematosphæria pertusa, Fckl. Sym. Myc. p. 162.*

On elm boards. Dec.—Feb. [Low. & Mid. Carolina.]

Differing from the typical form in not having any black stain. Asci clavate, elongated; sporidia biserial, oblongo-lanceolate, for the most part strongly constricted in the centre, uniseptate (.0007-.0008 in.) .0177-.02 m.m. each articulation containing two nuclei; occasionally two additional septa are formed, and the sporidia are curved either even, or constricted at the commissures.—*B. & Br.*

2605. Sphæria callicarpa. *Curr.* "Large-spored Sphæria."

Perithecia large, almost globose; ostiola mamillate; sporidia broadly fusiform, slightly constricted, with a median septum and 1-3 near each end, greenish, at length brown, usually with hyaline extremities.—*Curr. Linn. Trans.* xxii. p. 321, t. 58, f. 62.

On old palings. March. Blackheath.

Sporidia biseriate, very broadly fusiform (.0024-.003 in.) .06-.075 m.m. long, usually slightly constricted in the middle, with a median septum, and from one to three other septa close together at each end of the sporidium, colour greenish, becoming brown with age, usually a hyaline tip at each end.—*F.C.*

2606. Sphæria Aspegrenii. *Fr.* "Blackthorn Sphæria."

Subgregarious, black; perithecia emersed, hemispherical, even, shining; ostiola simple, at length umbilicate, pierced; asci linear; sporidia uniseriate, oblong, triseptate.—*Fr. Kunze, M.H.* ii. p. 40. *B. & Br. Ann. N.H.* no. 879, t. 11, f. 26. *Fr. S.M.* ii. p. 465. *Melanomma Aspegrenii, Fckl. Sym. Myc.* p. 159, t. 3, f. 29.

On blackthorn.

Sporidia uniseriate but not concatenate, oblong, triseptate, enucleate (.0008 in.) .02 m.m.

2607. Sphæria Jenynsii. *B. & Br.* "Jenyns's Sphæria."

Perithecia semi-immersed, subpruinose; ostiola conical or cylindrical: asci clavate; sporidia cymbiform, at length triseptate.—*B. & Br. Ann. N.H.* no. 875, t. 10, f. 22.

On dead wood. Sept.—Dec.

Half immersed in the wood, but not accompanied by any black stain; perithecia subpruinose or rugose; ostiola conical or cylindrical, sometimes slightly compressed; asci clavate; sporidia biseriate (.0012 in.) .03 m.m. long, cymbiform, at length triseptate.—*B. & Br.*

2608. Sphæria pæcilostoma. *B. & Br.* "Furze-twigg Sphæria."

Perithecia half-free, subglobose, opaque; ostiola variable, obsolete, conical, cylindrical; asci short; sporidia cymbiform, acute.—*B. & Br. Ann. N.H.* no. 876, t. 10, f. 23.

On twigs of furze. Twycross.

Perithecia quite free above, subglobose, opaque; ostiolium very variable in form, obsolete, conical, compressed, or abruptly cylindrical; asci clavate, short; sporidia (.001 in.) .025 m.m. long, cymbiform, acute at either extremity, or even appendiculate, containing four nuclei. Allied to *S. Jenynsii*, but more freely developed, smaller, with shorter asci and smaller sporidia.—*B. & Br.*

2609. Sphæria brachythele. *B. & Br.* "Elder Sphæria."

Perithecia semi-immersed, globose; ostiola short, papillæform; asci cylindrical; sporidia large, subfusiform, constricted in the centre 1-5 septate.—*B. & Br. Ann. N.H. no. 877, t. 10, f. 24.*

On decorticated elder. Feb. Batheaston.

Perithecia rather large, scattered, half-immersed, globose, attenuated above into a short papillæform ostiolum; asci cylindrical; sporidia (.0013 in.) .03 m.m long, subfusiform, with one side more convex when seen laterally, strongly constricted in the centre, at first uniseptate, at length 3-5 septate; endochrome dark.—*B. & Br.*

2610. Sphæria vilis. *Fr.* "Solitary pertuse Sphæria."

Solitary; perithecia convex, obtuse, small, black; base plane; ostiola papillate, deciduous; sporidia oblong, obtuse, triseptate, constricted at the septa, yellowish.—*Fr. S.M. ii. p. 466. Berk. Ann. N.H. no. 184. Fckl. exs. no. 935. Melanomma vilis, Fckl. Sym. Myc. p. 160.*

On rotten oak wood.

2611. Sphæria mastoidea. *Fr.* "Naked Ash Sphæria."

Scattered, black, shining; perithecia conical, semi-immersed, even; ostiola minute, papillæform, then pierced.—*Fr. S.M. ii. p. 463. Berk. Ann. N.H. no. 183.*

On dead ash twigs. King's Cliffe. [Low. & Mid. Carolina.]

B. ERUMPENTES.

Perithecia at length erumpent, almost superficial.

a. Obturatæ.

Perithecia at first innate, then erumpent and naked; ostiolum papillæform.

** Parasitic.***2612. Sphæria nigerrima.** *Blox.* "Clustered Parasitic Sphæria."

Perithecia irregularly ovate or conical, often superimposed, forming a black tubercle; ostiola somewhat elongated and rounded; sporidia biseriate, hyaline, subelliptic, at length multi-septate.—*Curr. Linn. Trans. xxii. p. 272. B. & Br. Ann. N. H. no. 869, t. 10, f. 19.*

Parasitic on various species of *Diatrype*.

Asci clavate. Sporidia often swollen on one side, like the frustules of *Eunotia*, at length multiseptate, with one or two vertical dissepiments ('00083-'0005 in.) '02-'0125 m.m. The perithecia are sprinkled over with short stiff bristles, they appear at first like the ostiola of the *Diatrype*. It approaches very near to *Dothidea*.

2613. Sphæria apotheciorum. Mass. "Lichen-cup
Sphæria."

CONIDIA.—*Gymnosporium physciæ*, Kalchbr. Szep. Gomb. Jeg. 356. Fckl. exs. no. 100.

ASCOPHORE.—Stroma black, rugulose, rather rough; perithecia aggregated, subrotund, papillate, confluent; asci somewhat obtuse, paraphyses sub-clavate; sporidia elliptic, bilocular, diaphanous.—Mass. Lich. p. 26, f. 41. B. & Br. Ann. N.H. no. 871. *Sphæria epicymatia*, Wallr. Fl. Germ. ii. p. 775. Nyl. Prod. p. 85. Syn. p. 42. *Sphæria lichenicola*, Smrf. Lapp. 218. Fl. Dan. t. 955, f. i. *Epicymatia vulgaris*, Fckl. Sym. Myc. p. 118.

On apothecia of *Parmelia subfusca*, &c. N. Wales, &c.

Berkeley states that the fruit is just like that of *Phacopsis varia*, Tul. If so the sporidia are triseptate, and ('00035 in.) '009 m.m. long ('0003 in.) '00744 m.m. broad.

2614. Sphæria thallophila. Cooke. "Sunken Lichen
Sphæria."

Scattered or gregarious, semi-immersed in the lichen thallus; perithecia subglobose, carbonaceous, papillate, pierced; asci cylindrical; sporidia uniseriate, elliptical, uniseptate, not constricted, hyaline, at length pale greenish-yellow.

On thallus of *Lecanora subfusca*. Glenshee. Aug., 1856. (Dr. L. Lindsay.)

Sporidia ('0004 in.) '01 m.m. long. It is not improbable that this is a naked *Sphæria* springing from the wood beneath, and perforating the thin lichen thallus. A single small specimen is all we have seen, and that was insufficient to satisfy us on this point.

2615. Sphæria ventosaria. Linds. "Lindsay's Lichen
Sphæria."

Perithecia seated on thalline cones, as stellate points girt by a sort of thalline exciple, smooth and black, or pruinose; sporidia simple, then uniseptate, broadly ellipsoid or oval and constricted, brown.—Lindsay, Trans. Roy. Soc. Ed. xxiv. p. 439. xxv. p. 357. Trans. Linn. Soc. xxvii. p. 346, t. 50, f. 10. Quart.

Journ. Micr. Sc. xi. n.s. p. 31. *Microthelia ventosicola*. Mudd.
Brit. Lich. p. 307 ?

On *Lecanora ventosa*. Lochnagar, &c.

* *Caulicolous*.
*

2616. Sphæria dioica. *Moug.* "Two-ranked Sphæria."

Scattered or subgregarious, semi-immersed, the matrix blackened; perithecia black, rough, often sulcate above, subconical; asci clavate, stipitate; sporidia crowded or biseriate, narrowly elliptical, obtuse, triseptate scarcely constricted, pale brown.—*Fr. El.* ii. p. 82. *Eng. Fl.* v. p. 253.

On furze. Shere. (Dr. Capron.)

The asci are always clavate. Sporidia ('0006 in.)

Mr. Currey states that the specimens of *S. dioica* in the Hookerian collection are only a sub-cuticular form of *S. pulvis-pyrius*. The specimens on furze, which are here referred to *S. dioica*, are quite different from *S. pulvis-pyrius*, the perithecia are much larger, less densely gregarious, different in shape, and with distinctly clavate asci.

2617. Sphæria nidula. *Sow.* "Nestling Sphæria."

Cæspitose, superficially innate; perithecia crowded, globose, papillate, black, very minute, punctato-rugose.—*Sow. t.* 394, f. 2. *Fr. S.M.* ii. p. 418. *Eng. Fl.* v. p. 254.

In little hollows of bean roots.

2618. Sphæria scoriadea. *Fr.* "Doubtful Sphæria."

Innate; stroma broadly effused, latent, black; perithecia horny, crowded, hemispherical, rather prominent, shining, pierced; sporidia biseriate, fusiform, reddish-brown.—*Fr. El.* ii. p. 87. *Berk. Ann. N.H.* no. 176. *Fries. exs.* no. 344. *Curr. Linn. Trans.* xxii. t. 49, f. 187 (*Leighton Anglo. Lich.* p. 39, under *Verrucaria conferta*).

On birch twigs.

"I believe this production to be a *Verrucaria*. The contents of the perithecia are grumous, containing biseriate fusiform sporidia."—*M.J.B.* Sporidia reddish-brown, opaque, lageniform, when young with a gelatinous envelope, the tips of the sporidia are paler than the body, they are irregular in length and breadth, varying from '0016-'0028 in. in length. There is some doubt whether this plant be not a *Verrucaria*.—*F.C.*

2619. Sphæria juglandis. *Fr.* "Walnut Sphæria."

Gregarious; perithecia globose, at first depressed, and immersed, then erumpent, even, black, pierced with a simple ostio-

lum, grey within.—*Fr. S.M.* ii. p. 493. *Fries. exs.* no. 239. *Eng. Fl.* v. p. 271.

On walnut twigs.

Fuckel regards this simply as a *Diplodia*.

2620. Sphæria loniceræ. *Sow.* "Honeysuckle Sphæria."

Gregarious, erumpent; perithecia globose, nearly free, thin, black, soon torn and cup-shaped; ostiolum simple; sporidia uniseriate, colourless, elliptical, endochrome tripartite.—*Sow. t.* 393, *f.* 6. *Fr. S.M.* ii. p. 492. *Fries. exs.* no. 349. *Eng. Fl.* v. p. 271. *Curr. Linn. Trans.* xxii. t. 59, *f.* 115 (not *Fckl. Sym. Myc.*) *Cooke exs.* no. 262.

On honeysuckle.

[Mid. Carolina.]

Sporidia ($\cdot 0004$ – $\cdot 0006$ in.) $\cdot 01$ – $\cdot 015$ m.m.

2621. Sphæria obliterans. *B. & Br.* "Bleached-fir Sphæria."

Perithecia scattered, half covered by the bleached fibres of the matrix, collapsing, astomous; asci cylindrico-clavate; sporidia uniseriate, obovate, triseptate, septa at length obliterated.—*B. & Br. Ann. N.H.* no. 890, t. 11, *f.* 34.

On bare fir-poles. Mar. Batheaston.

Sporidia ($\cdot 0007$ in.) $\cdot 0177$ m.m. Septa at length obliterated, their position being still indicated by a slight constriction.

**** Coprophilous.**

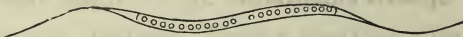


Fig. 394.

2622. Sphæria bovilla. *Cooke.* "Tailed cow-dung Sphæria."

Perithecia scattered, sub-globose, semi-immersed, black; ostiola prominent, pierced; sporidia 8, cylindrical, long, flexuous, containing numerous nuclei; each extremity furnished with a flexuous hair-like appendage, half the length of the sporidium, hyaline, greenish.

On cow dung. Aug. Shere. (Dr. Capron.)

This curious species resembles in some respects the *Cercophora mirabilis* of Fuckel (*Sym. Myc.* p. 245 t. vi. f. 20), but Dr. Capron is decidedly of opinion that the above sporidia are quite mature, and never become ovate, opaque-brown, with hyaline appendages, as in that species. Sporidia, without appendages ($\cdot 002$ in.) $\cdot 05$ m.m long. (Fig. 394.)

**** *Culmicolous.*

2623. Sphæria arundinacea. Sow. "Reed Sphæria."

CONIDIA.—Stroma none; conidia erumpent, compact, globose, pellucid, blackish.—*Melanconium sphærospermum*, Fr. *S.M.* iii. p. 489. *Rabh. F.E.* no. 179. *Fckl. exs.* no. 86. *Bot. Zeit.* 1859, t. 11, f. 5. See no. 1387, ante.

PYCNIDIA.—Erumpent, linear, with scarcely any stroma; perithecia in one or two rows, connate, with a very obsolete ostiolum; stylospores oblong, simple.—*Sphæropsis arundinacea*, Berk. *Outl.* p. 316.

ASCOPHORE.—Somewhat covered, oblong, minute, greyish-black; stroma scarcely distinct; perithecia very minute, stipate, rather compressed in 2 or 3 series; ostiola obsolete, white within; asci clavate; sporidia oblong, triseptate.—*S. Godini*, Desm. *exs.* no. 439. *Ann. Sc. Nat.* 1846, p. 49. *Curr. Linn. Trans.* xxii. t. 49, f. 202. *S. arundinacea*, Sow. t. 336. *B. & Br. Ann. N.H.* no. 603. *Curr. Linn. Trans.* xxii. t. 49, f. 200. *Berk. exs.* no. 82. *Eng. Fl.* v. p. 256. *Fr. S.M.* ii. p. 429. *Fckl. exs.* no. 907. *Pleospora arundinacea*, *Fckl. Sym. Myc.* p. 137, t. iii. f. 28.

On dead reeds. Spring. Common. [Low. Carolina.]

"Messrs. Berkeley and Broome state that *S. Godini* is identical with *S. arundinacea*, but in the Kew specimens the species differ in the colour of the sporidia, and in the number of septa, in *S. arundinacea* they are yellowish-brown, 3-5 septate, and in *Godini* colourless and uniseptate."—*F.C.*

Sporidia '0010-'0016 in. The difference is most probably only one of age.

2624. Sphæria culmifraga. Fr. "Erumpent Grass Sphæria."

Scattered; perithecia covered, erumpent, somewhat compressed, black; ostiolum short, naked, conical; sporidia curved, fusiform, multiseptate, one of the articulations swollen.—*Fr. S. M.* ii. p. 510. *Fries exs.* no. 373. *Eng. Fl.* v. p. 275. *B. & Br. Ann. N.H.* no. 614. *Fckl. exs.* no. 2245. *S. longa*, Sow. t. 393, f. 4. *Pleospora culmifraga*, *Fckl. Sym. Myc.* p. 137, t. 3, f. 21.

On culms of grass, &c. Common.

Two varieties are published by Desmazieres, and a third has been found at Rudloe, more highly developed, the perithecia crowded, and slightly hispid, and the acute ostiola elevating the cuticle.

b. Ceratostomæ.

Ostiolum elongated, cylindrical, free, longer than the perithecium, emergent.—*Fr. S.M.* ii. p. 322.

2625. Sphæria cirrhosa. Pers. "Tendril Sphæria."

SPERMOGONIA.—Spermatia ovato-cylindrical, hyaline.

CONIDIA.—On the tips of threads, ovate, triseptate, dark-brown.—*Fckl. Sym. Myc. p. 127.*

ASCOPHORE.—Scattered, black; perithecia immersed, subglobose, fibrillous; ostiola rugged, subfalcate, spinulose; sporidia biseriate, elliptical, colourless.—*Pers. Ic. Pict. t. 24, f. 3. Fr. S. M. ii. p. 475. Fries. exs. no. 346. Eng. Fl. v. p. 267. Curr. Linn. Trans. xxii. t. 58, f. 71. Fckl. exs. no. 1804. Ceratostoma cirrhosum, Fckl. Sym. Myc. p. 127.*

On soft rotten wood.

[Mid. Carolina.]

Variable. Sometimes scattered, with the perithecia curiously fibrillous, the fibrillæ occasionally brown, sometimes, in harder wood, collected in rows or little fascicles, and almost destitute of fibrillæ. Sporidia (.0004-.0005 in.) .01-.0125 m.m. long.

2626. Sphæria pilifera. Fr. "Thread-beaked Sphæria."

SPERMOGONIA.—Spermatia oblong-ovate, simple, hyaline.

ASCOPHORE.—Gregarious, naked, black; perithecia very small, globose, even; ostiola capillary, very long, acuminate; sporidia? —*Fr. S. M. ii. p. 472. Fries. exs. no. 25. Nees. f. 354. Eng. Fl. v. p. 266. Ceratostoma piliferum, Fckl. Sym. Myc. p. 128.*

On pine wood.

[Low. & Mid. Carolina.]

2627. Sphæria ligneola. B. & Br. "Smooth-beaked Sphæria."

Perithecia globose, subglaucous, smooth, immersed; neck elongated, obtuse; sporidia elliptic uniseptate.—*B. & Br. Ann. N.H. no. 883, t. 11, f. 29.*

On decayed oak. Jan. Somerset.

Perithecia scattered, immersed in the wood, globose, smooth, black, with a slight glaucous bloom; neck about as long as the perithecia, obtuse. Sporidia (.0003-.0004 in.) .0075-.01 m.m. long, binucleate, at length uniseptate. Resembling young *S. cirrhosa*, but perfectly smooth and glaucous, and by no means fibrillose.—*B. & Br.*



Fig. 395.

2628. Sphæria ampullasca. Cooke. "Flask-fruited Sphæria."

Perithecia gregarious or scattered, immersed, globose, black; ostiola nearly three times as long as the diameter of the perithecia, flexuous; asci ampullæform, truncate above, attenuated below;

sporidia inordinate, narrowly lanceolate, obtuse, with a large nucleus near each extremity, hyaline.

On rotten oak. Feb. Shere. (Dr. Capron.)

The very peculiar form of the asci is sufficient to distinguish this species. They are '0025-'003 in. long. Sporidia ('0005 in.), '0127 m.m. long.

(Fig. 395.)

2629. Sphæria lampadophora. *B. & Br.* "Clustered Beak Sphæria."

Perithecia gregarious, globose, dingy, pruinose; neck long, flexuous, irregular; sporidia fusiform, curved, multiseptate.—*B. & Br. Ann. N.H. no. 882, t. 11, f. 28.*

On decayed wood. Oct.—April.

Gregarious; perithecia middle-sized, globose, brownish, pulverulent, or subtomentose; neck elongated, irregular, flexuous. Sporidia linear-fusiform ('003 in.) '075 m.m. long, multiseptate. With the habit of *S. rostrata*, but with different fruit.

2630. Sphæria stylophora. *B. & Br.* "Patchy Beak Sphæria."

Perithecia at first covered, at length free, disposed in orbicular patches, ovate, attenuated upwards; ostiola longer than the perithecia; asci broadly clavate; sporidia fusiform, hyaline, uniseptate, appendiculate at either end.—*B. & Br. Ann. N.H. no. 976, t. 17, f. 29.*

On *Acer platanoides*. Mossburnford.

At first covered, then exposed; perithecia collected in little orbicular patches, ovate, attenuated above, with styliform ostiola longer than themselves; asci broadly clavate; sporidia biserial, hyaline, fusiform, uniseptate, appendiculate at either end.—*B. & Br.*

C. SUBTECTÆ.

Perithecia at first innate, concrete with the matrix, at length naked above; ostiola simple, sub-erumpent.—*Fr. S.M. ii. p. 322.*

a. Immersæ.

Perithecia immersed in the perennial parts of plants; neck short and erumpent.

* Endoxylæ.

2631. Sphæria livida. *Fr.* "Livid Sphæria."

Scattered; perithecia subglobose, nestling in a prominent elliptic grey tubercle formed from the wood; ostiola pierced; spor-

idia brown or yellowish brown, elliptical, triseptate.—*Fr. S.M. ii. p. 479. Fries. exs. no. 316. Eng. Fl. v. p. 267. Curr Linn. Trans. xxii. t. 58, f. 77.*

On dried branches (ivy, &c.). [Mid. & Up. Carolina.]

Spots rounded when there is but one perithecium, subelliptic when there are two together, and not distinctly defined at the base; perithecia immersed in the wood, depresso-globose, not stuffed, furnished with a short neck; ostiola rather prominent, at length pierced. I find also apparently the same species with several perithecia beneath each black elliptic spot, and the spots are 2-3 lines long.—*M. J. B. Sporidia* ('0005-'0007 in.) '0127-'0177 m.m.

2632. Sphæria melanotes. *B. & Br.* "Black-spot Sphæria."

Spots elongated, blackish; perithecia covered; ostiola minute; asci linear; sporidia elliptic, brown.—*B. & Br. Ann. N.H. no. 623, t. 9, f. 6.*

On oak palings. Dec. Batheaston.

Forming oblong, somewhat irregular, black patches about an inch long, sprinkled with the punctiform ostiola; perithecia immersed, scarcely visible except from their ostiola; asci linear; sporidia elliptic, brown ('0005 in.) '0127 m.m. long. With somewhat of the habit of *S. livida*, but smaller perithecia, and different fruit. The black spots are scarcely at all raised. The perithecia do not raise the surface of the wood into little waves, as in *Sphæria anserina*. P.—*B. & Br.*

2633. Sphæria hypotephra. *B. & Br.* "Grey-spot Sphæria."

Spots effused, cinereous; perithecia covered, subglobose; ostiola rather obtuse, emergent; asci linear; sporidia elongated, curved, at length triseptate.—*B. & Br. Ann. N.H. no. 624, t. 9, f. 7.*

On oak rails. Nov. King's Cliffe.

Forming large cinereous spots. Perithecia covered, globose; ostiola rather obtuse, protruding; asci linear; sporidia uniseriate oblong, slightly curved, rather narrow, about ('001 in.) '025 m.m. long, at length 3 septate, often binucleate. Allied to *S. melanotes*, but distinguished by the pale spots and differently shaped, larger sporidia.—*B. & Br.*

2634. Sphæria hemitapha. *B. & Br.* "Bleached-spot Sphæria."

Perithecia globose, semi-immersed, opaque, growing on white spots; ostiola papillaform; sporidia elliptic-oblong, triseptate.—*B. & Br. Ann. N.H. no. 885, t. 11, f. 30.*

On felled oak. Feb. Bath.

Growing on white bleached spots ; perithecia globose, the upper half free, opaque, not shining ; ostiolum small, papillæform ; asci linear-clavate ; sporidia biseriate ($\cdot 00125$ in.) $\cdot 03$ m.m. long, oblong-elliptic, at length triseptate, but not torulose. Very near to *S. hypotephra*, but there are no cinereous spots, the perithecia are half exposed, and the sporidia larger.—*B. & Br.*

2635. Sphæria apiculata. Curr. "Buried railing Sphæria."

Perithecia large, subglobose, deeply buried ; ostiola somewhat gaping ; sporidia olive-brown, straight or slightly curved, bisepate, with a hyaline tip (not *S. apiculata* Wallr. *Fl. Germ.* p. 778, nor *Fckl. exs.* no. 918).—*Curr. Linn. Trans.* xxii. p. 326, t. 58, f. 96. *Cooke. exs.* no. 272.

On railings.

Curious both in habit and fruit. The perithecia are completely and deeply buried in the wood, and are sometimes scattered, sometimes in groups ; the perithecia seem eventually to throw off the wood above the ostiola, leaving deep depressions in the surface of the wood. Sporidia uniseriate, olive-brown, straight or very slightly curved, bisepate, each furnished with a hyaline tip, which is shut off from the rest of the sporidium by one of the septa ; length of sporidia ($\cdot 001$ in.) $\cdot 025$ m.m.—*F.C.*

2636. Sphæria bacillata. Cooke. "Long-spored sunken Sphæria."

Perithecia scattered, ovate, immersed, at length the upper portion more or less exposed, black ; ostiolum conical, erumpent, pierced ; sporidia linear, straight, obtuse at the ends, the length of the ascus, multiseptate, hyaline, yellowish.—*Sphæria longispora*, Capron, *MSS.*

On decorticated rotten sticks. Shere. (Dr. Capron.)

Sometimes only the ostiolum is visible above the surface of the matrix, sometimes nearly one third of the perithecium is emergent, mostly following the course of the fibres. The sporidia are ($\cdot 0076$ in.) $\cdot 2$ m.m. long, divided by septa throughout their entire length. This certainly does not accord with the brief characters of Currey's *S. longispora*, neither does it belong to the same section.

2637. Sphæria anserina. Pers. "Wavy Sphæria."

Perithecia ovate, immersed, raising the wood into minute papillæ ; ostiola obtuse, erumpent ; asci sublinear ; sporidia elliptic, uniseriate, uniseptate.—*Pers. Ic. & Desc.* t. 1, f. 8. *Fr. S.M.* ii. p. 480. *B. & Br. Ann. N.H.* no. 889.

On dry wood. Shrewsbury.

The surface of the wood is raised by the perithecia into little waves. Sporidia ($\cdot 0008$ - $\cdot 001$) $\cdot 02$ - $\cdot 025$ m.m., resembling the common type of *Diplodia*.

The *S. anserina* of Eng. *Fl.* v. p. 268, is a *Sphæroopsis* (*B. & Br. Ann. N.H.* no. 623), probably a stylosporous condition of the above.

** *Endophloeæ.***2638. *Sphæria velata.* Pers. "Veiled Sphæria."**

Broadly effused, thin; perithecia scattered, immersed, covered with a black membranaceous crust; ostiola erumpent; sporidia crowded, colourless, narrowly almond shaped, endochrome 2-4 partite.—*Fr. S.M.* ii. p. 375. *Fries. exs.* no. 225. *Eng. Fl.* v. p. 246. *Sow. t.* 372 f. 10. *Curr. Linn. Trans.* xxii. t. 45, f. 104. *Fckl. exs.* no. 958. *Diaporthe velata*, *Nke. Pyr. Germ.* i. p. 287. *Rabh. F.E.* no. 1143.

On lime twigs.

[Mid. Carolina.]

Surrounding the branches, and growing in the inner bark, perforating the epidermis with the ostiola and at length throwing it off; perithecia minute, erect, ovato-globose, sometimes solitary, sometimes irregularly aggregate, scarcely disposed in circles, by no means stipate, nestling in the bark itself, covered with a thin patchy stroma, which is tuberculated with the perithecia; ostiola erumpent, irregular, opaque.—*Fries.*

Sporidia (·0005 in.) ·0127 m.m.

2639. *Sphæria ciliaris.* Curr. "Thread-bearing Sphæria."

Concealed; perithecia small, subglobose, bearing threads of *Helminthosporium* on their surface; sporidia biseriata, colourless, narrow, pointed at the extremities, quadrinucleate.—*Curr. Micro. Journ.* vii. p. 232, t. 11, f. 15.

On ash branches. Oct. Weybridge.

Covering the branches with perithecia, which are concealed (with the exception of the ostiola) beneath the cuticle, and many parts of them rough with the erect threads of *Helminthosporium*. Sporidia sometimes almost almond-shaped, sometimes strongly constricted in the middle, always (or almost always) with four nuclei, from (·0005-·0009 in.) ·0125-·022 m.m. long.

2640. *Sphæria celata.* Curr. "Concealed Sphæria."

Perithecia round; solitary, or in small groups, mostly concealed; ostiolum short, somewhat flat, rather gaping; sporidia biseriata, dark rich brown, oblong, constricted in the middle.—*Curr. MSS. Berk. Outl.* p. 398. *Sp. obtecta*, *Curr. Micr. Journ.* vii. p. 233, t. xi. fig. 16. *B. & Br. Ann. N.H.* no. 979, t. 17, f. 32.

On wych elm.

Sporidia (·0012-·0015 in.) ·03-·035 m.m. long.

Completely concealed by the cuticle; perithecia subglobose, scarcely becoming free from the matrix, walls thick, jet black, gelatine white. Asci clavate. Sporidia biseriata, in an early stage biconical, pointed at either end, endochrome proportionally small, when old shorter, biconical, obtuse, dark brown, the outer coat being entirely absorbed.

2641. Sphæria xylostei. Pers. "Woodbine Sphæria."

MACROSTYLOSPORES.—Oblong, ovate, constricted, brown, 3-5 septate, muriform.

PYCNIDIA.—Stylospores didymous, oblong, dark brown.—*Diplodia Loniceræ*, Fckl. exs. no. 1951.

ASCOPHORE.—Gregarious, staining black; perithecia covered, emergent, entire, globose; ostiola slightly prominent, seated on a black spot, at length pierced; sporidia dark brown, bordered, elliptical.—Fr. S.M. ii. p. 487. Fries. exs. no. 189. Eng. Fl. v. p. 270. Curr. Linn. Trans. xxii. t. 58, f. 84. *S. semi-immersa*, Grev. Fl. Ed. p. 361. *Didymosphæria xylostei*, Fckl. Sym. Myc. p. 141. Fckl. exs. no. 914. *Amphisphæria xylostei*, De Not. Sfer. Ital. no. 74.

On woodbine.

Sporidia (·0006-·0007 in.) ·015-·0175 m.m. long.

2642. Sphæria decedens. Fr. "Immersed hazel Sphæria."

Gregarious; perithecia globose, immersed, black, neck straight; ostiola erumpent, lacerating the epidermis.—Fries. exs. no. 81. Berk. Mag. Zool. & Bot. no. 24. Nees. f. 340. Fr. S.M. ii. p. 481.

On hazel.

Perithecia sometimes solitary, sometimes crowded, immersed in the inner bark, attenuated into a short neck.—Fries.

2643. Sphæria discutiens. Berk. "Sunken Elm Sphæria."

Broadly effused; perithecia sunk in the inner bark, at length throwing off the epidermis by means of their long, cylindrical, rather scabrous ostiola, covered with a dull black stroma; sporidia biseriate or crowded, 1-3 septate, colourless, almond-shaped.—Eng. Fl. v. p. 245. Curr. Linn. Trans. xxii. t. 47, f. 112.

On elm branches.

Perithecia deeply buried. Ostiola long and protruding. Sporidia (·0005 in.) ·0127 m.m. long.

2644. Sphæria fraxinicola. Curr. "Concealed Ash Sphæria."

Perithecia sub-lageniform; ostiolum pointed or nipple-like, base sometimes adnate, piercing the bark; sporidia uniseriate, elliptical, biseptate, colourless.—Curr. Linn. Trans. xxiv. t. 25, f. 34. B. & Br. Ann. N.H. no. 1098.

On dead ash branches. Sept. Near Lewes.

Perithecia with the base sometimes adnate to the wood, and leaving a circular depression when detached, piercing through the inner bark, and just through the outer; the ostiola fall off with a circumscissile fissure. sometimes the perithecia may be stripped off with a fragment of the inner bark. Sporidia ('0005-'0006 in.) '0125-'015 m.m. long, biseptate, trinucleate, colourless, the outer membrane and septa sometimes invisible.

2645. Sphæria verecunda. *Curr.* "Minute sunken Sphæria."

Perithecia subglobose or conical, very small, with a pointed or nipple-shaped ostiolum, which just penetrates the outer bark. Sporidia pale brown, with 5 (rarely 6) transverse septa, and 1-3 longitudinal septa, constricted at each septum, mostly uniseriate and overlapping, occasionally biseriate.—*Curr. Linn. Trans.* xxiv. t. 25, f. 3. *B. & Br. Ann. N.H.* no. 1099.

On sticks. October. Batheaston.

Sporidia ('0008-'001 in.) '02-'025 m.m. long.

2646. Sphæria blepharodes. *B. & Br.* "Depressed twig Sphæria."

Perithecia covered, depresso-globose; ostiola twice as long; asci clavate; sporidia biseriate, hyaline, fusiform.—*B. & Br. Ann. N.H.* no. 978, t. 17, f. 31.

On twigs of *Acer pseudo-platanus*. Mossburnford.

Completely covered by the cuticle; perithecia globose, depressed; ostiola piercing the cuticle, twice as long; asci clavate; sporidia biseriate, hyaline, fusiform ('0005 in.) '0127 m.m. long.

** *Endocaulæ.*
*

2647. Sphæria spiculosa. *Pers.* "Shining patch Sphæria."

Effused, immersed, black; perithecia globose; ostiola very slender, long, round, erumpent; sporidia narrowly almond-shaped, acuminate, colourless, quadrinucleate, then quadripertite.—*Fr. S.M.* ii. p. 369. *Fries. exs.* no. 307. *Eng. Fl.* v. p. 245. *Cooke exs.* no. 381. *Curr. Linn. Trans.* xxii. t. 47, f. 111. *Fckl. exs.* no. 957. *Mamiania spiculosa*, *De Not. Schema*, p. 37. *Euporthe spiculosa*, *Nke, Pyr. Germ.*

On willows and herbaceous stems.

* *var. pulla.* *Nke.* Spermatia oblong-lanceolate, with 1-2 nuclei; simple, hyaline.—*Phoma hederæ*, *Desm. exs.* no. 350. *Fckl. exs.* no. 1720.

ASCOPHORE.—*Diaporthe pulla*, Nke. Pyr. i. p. 249. Fckl. exs. no. 957.

On ivy stems.

Staining the branches on which it grows of a bright shining black; perithecia immersed, irregularly scattered, sometimes grouped, easily known by its black appearance and hair-like ostiola; sporidia (0004-0005 in.) 01-0125 m.m. long.

2648. Sphæria inquilina. Fr. "Black patch Sphæria."

Perithecia immersed, covered with the blackened epidermis, latent, very thin, pallid; nucleus black; ostiola punctiform, black, prominent; sporidia biseriate, colourless, subfusiform, constricted, 4-nucleate.—Fr. El. ii. p. 100. Fries. exs. no. 402. Eng. Fl. v. p. 276. Curr. Linn. Trans. xxii. t. 58, f. 92.

On stems of *Umbelliferæ*.

The perithecia frequently drop out, leaving a white hollow in the matrix, closely resembling *S. spiculosa*. Sporidia (0004-0005 in.) 01-0125 m.m.

2649. Sphæria Berkeleyi. Desm. "Berkeley's sunken Sphæria."

Perithecia minute, latent, immersed in the stem; ostiola conic-acuminate, punctiform; asci minute, linear; sporidia subelliptic.—Desm. Ann. Sc. Nat. 1837, viii. p. 358. *S. angelicæ*, Berk. exs. no. 88. Mag. Zool. & Bot. no. 28, t. 3, f. 7.

On stems of *Angelica sylvestris*. Mar. King's Cliffe.

Minute, invisible to the naked eye, except the stem is wet, then the extremely minute protruded tips of the ostiola are seen in single rows upon the ribs. Perithecia black or brownish, immersed in the woody part of the stem, globose, with an abrupt, conical, subobtuse mouth, pierced with a minute orifice. Contents of the perithecia pink, oozing out, and forming a little halo round the ostiolum. Asci minute, linear, containing a few subelliptic sporidia, accompanied by variously sized globules of an oily matter.

2650. Sphæria scirpicola. D.C. "Bulrush Sphæria."

Scattered, minute, black; perithecia immersed, globose, neck very short; ostiolum naked, punctiform, subglobose; sporidia oblong, somewhat curved, triseptate, with the articulations slightly swollen.—Fr. S.M. ii. p. 511. Fries exs. no. 150. Eng. Fl. v. p. 275. B. & Br. Ann. N.H. no. 641*.

On stems of *Scirpus lacustris*, *Typha* and *Carex*. Common.

2651. Sphæria phomatospora. *B. & Br.* "Little spored Sphæria."

Immersed; perithecia depressed, ellipsoid; ostiola papillæ-form; asci linear; sporidia uniseriate, oblong-elliptic, minute, hyaline, binucleate.—*B. & Br. Ann. N.H. no. 647, t. 11, f. 33. Curr. Linn. Trans. xxii. t. 58, f. 94.*

On dead potato stalks. March. Gloucestershire.

Immersed, and with the exception of the black punctiform ostiolum, quite invisible, being concealed by the woody tissue. Contents of perithecia pale salmon coloured. Asci extremely delicate, linear. Sporidia hyaline, uniseriate, oblong-elliptic, minute, obtuse, with a single nucleus at either extremity. Closely resembling the spores of a *Phoma*.—*B. & Br.*

Sporidia (·0003-·0004 in.) ·0075-01 m.m. long.

b. Obtectæ.

Perithecia immersed in the bark, with a short, erumpent neck.

† *Rameales.*

* Sporidia cylindrical, curved or straight, simple, rarely septate, hyaline.—*Cryptosphæria, De Not.*

2652. Sphæria lanata. *Fr.* "Woolly-brown Sphæria."

Perithecia covered, free, globose, clad with ferruginous-brown wool; ostiola erumpent, black; sporidia minute, curved, hyaline; asci broadly elliptic.—*Fr. S.M. ii. p. 482. Berk. Ann. N.H. no. 185. Fries. exs. no. 159. Fckl. exs. no. 805. Enchnoa lanata, Fr. S.V.S. p. 393. Fckl. Sym. Myc. p. 150, t. iv. f. 15.*

On birch. Appin.

Perithecia very large.

2653. Sphæria glis. *B. & Curr.* "Dormouse Sphæria."

Perithecia depressed in the middle, nestling beneath the cuticle, astomous; mycelium ample, tomentose, brown; sporidia oblong, pale brown, curved, very obtuse, quadrinucleate.—*B. & Br. Ann. N.H. no. 884. Curr. Linn. Trans. xxii. t. 57, f. 1. Fckl. exs. no. 2252. Enchnoa glis, Fckl. Sym. Myc. p. 150.*

On oak twigs. Sept. Weybridge.

Completely concealed by the cuticle, which shows when removed a dense mycelium containing numerous depressed astomous perithecia. Sporidia (·0008-·0009 in.), ·02-·022 m.m. long, sausage-shaped, very obtuse, 4-nucleate. Intermediate between *S. lanata* and *S. hirta*.—*B. & Br.* Perithecia rather

large, round and very flat, seated on a dense subiculum, usually entirely hidden beneath the bark, not erumpent, but raising the bark into smooth, rounded, or elongated swellings; perithecia and subiculum usually of a dark dirty-green tinge.—*F.C.*

2654. Sphæria pruinosa. *Fr.* "Frosted Sphæria."

Gregarious; perithecia covered, depressed, adnate with the epidermis, frosted with grey meal; ostiola bursting forth in a bullate manner.—*Fr. S.M.* ii. p. 486. *Fries. exs. no.* 82. *Moug. exs. no.* 968. *Eng. Fl.* v. p. 269. *Berk. exs. no.* 85.

On ash twigs. Spring. [Mid. & Up. Carolina.]

Easily known when perfect by the grey frosted perithecia, which are deeply umbilicate beneath, by collapsing and separate, together with the epidermis, from the inner bark; sometimes, however, they are retained by the bark, and in that case the mealiness is seen only with great difficulty. Ostiola bursting through the cuticle and making the matrix rough, like a nutmeg grater, pierced with a round, depressed orifice.—*M.J.B.*

2655. Sphæria vibratilis. *Fr.* "Hidden Sloe Sphæria."

Scattered; perithecia entire, covered, globoso-depressed, even, black; ostiolum very minute, latent; sporidia cylindrical, curved, minute, hyaline.—*Fr. S.M.* ii. p. 482. *Fries. exs. no.* 315. *Eng. Fl.* v. p. 278. *Cryptosphæria vibratilis*, *De Not. Schema* p. 57. *Micro. Ital.* viii. 10. *Calosphæria vibratilis*, *Nke. Pyr. Germ.* p. 97.

On dead sloe.

When the epidermis is stripped off and held to the light, it is found to be perforated by the minute ostiola, though externally there is but a very slight indication of the presence of the perithecia.—*M.J.B.*

"Sporidia uniseriate, pale-brown, oblong-elliptic, slightly curved; endochrome bipartite."—*Curr. Linn. Trans.* xxii. f. 74.

2656. Sphæria millepunctata. *Grev.* "Thousand Point Sphæria."

Scattered; perithecia globose, persistent, black; ostiola slightly prominent, very minute punctiform, flattened; sporidia biseriate, or crowded, pale-brown, curved.—*Grev. t.* 201. *S. corticis*, *Sow. t.* 372, f. 5. *Fr. S.M.* ii. p. 481. *Curr. Linn. Trans.* xxii. t. 59, f. 108. *Fckl. exs. no.* 908. *Berk. exs. no.* 84. *S. populina*, *Pers. Ic. Pict.* t. 21, f. 5, 6. *Cryptosphæria millepunctata*, *Fckl. Sym. Myc.* p. 212.

On ash twigs. Common.

At first sight from the smoothness of the branches on which it grows resembling a *Verrucaria*. Sporidia (0006-0012 in.) 015-03 m.m. long.

2657. Sphæria salicella. Fr. "Minute-willow Sphæria."

CONIDIA.—Conidia oblong, straight or curved, obtuse, hyaline uniseptate.—*Discella carbonacea*, B. & Br. no. 426. *Phacidium*, Fckl. exs. no. 1100.

ASCOPHORE.—Covered; perithecia distinct, minute, seated beneath elongated pale patches of the epidermis; ostiola cylindrical, erumpent; sporidia biseriate, colourless, uniseptate, elliptical, often constricted.—Fr. S.M. ii. p. 377. Fries. exs. no. 188. Eng. Fl. v. p. 278. Fckl. exs. no. 800. *Diaporthe salicis*, Nke. Fckl. exs. no. 1987. *Cryptospora salicella*, Fckl. Sym. Myc. p. 193. *S. salicina*, Curr. Linn. Trans. xxii. t. 48, f. 149.

On willow branches. Common. [Up. Carolina.]

Sporidia (·0009 in.) ·022 m.m. long.

2658. Sphæria ocellata. Fr. "Eyelet Sphæria."

Scattered; perithecia immersed, globose, persistent, black; ostiola solitary, umbilicate, exserted from a truncate white disc; sporidia colourless, slightly curved, rounded or acute at the ends.—Fr. S.M. ii. p. 480. Eng. Fl. v. p. 268. Curr. Linn. Trans. xxii. t. 58, f. 86. *S. brevis*, Sow. t. 394, f. 4. *Halonina ocellata*, Fr. S.V. S. p. 397. *Cryptosphæria ocellata*, De Not. Schema p. 57.

On branches of ash, willow, &c.

Externally it at first sight resembles the state of *Stictis radiata* with an entire border, on a more minute investigation it might be taken for *Valsa nivea* or *V. leucostoma*, but the perithecia are solitary without any conceptaculum.—M.J.B. Sporidia (·0004 in.) ·01 m.m. long.

2659. Sphæria farcta. B. & Br. "Stuffed Sphæria."

Covered, scattered; perithecia solitary, globose, at length collapsed; neck short; ostiolum obtuse, at length perforating the cuticle; asci clavate, obtuse; sporidia oblong, rather obtuse at either end, 3-4 nucleate.—B. & Br. Ann. N.H. no. 631, t. 10, f. 15.

On dead elm twigs. Jan. Batheaston.

Scattered, scarcely conspicuous externally except from the slight projection over each perithecium, which is at length perforated by the obtuse ostiolum. Perithecia globose, collapsing when dry; neck short; asci clavate, subcylindrical, obtuse, filled with numerous oblong-linear sporidia, which are slightly obtuse at either end, and contain three or more globose nuclei. Resembles externally *V. hypoderma*, but the perithecia are solitary and the fruit different.—B. & Br.

2660. Sphæria revelata. *B. & Br.* "Uncovered Sphæria."

Covered, globose, large; ostiola short, papillæform, ultimately exposed; asci linear, flexuous; sporidia uniseriate, oblong, bisepate.—*B. & Br. Ann. N.H. no. 634, t. 11, f. 18.*

On branches of lilac, alder, &c. Jan. Apethorpe.

At first completely concealed beneath the rough bark, and at length only manifest from the ostiola thrusting off little patches of the matrix, and then appearing solitary or scattered on white spots. Perithecia globose, large; ostiola papillæform, distinct; asci linear, flexuous; paraphyses long, slender; sporidia uniseriate, oblong, hyaline, bisepate, with very distinct endochromes.—*B. & Br.*

2661. Sphæria quadrinucleata. *Curr.* "Four-nucleate Sphæria."

Perithecia small, subglobose; ostiola mamillate, piercing the outer bark; sporidia biseriate, closely packed, colourless, narrowly oblong, pointed or rounded at the ends, quadrinucleate.—*Curr. Linn. Trans. xxii. p. 325, t. 58, f. 90.*

On sticks. Sept. Weybridge.

Sporidia ('0006 in.) '015 m.m. long.

2662. Sphæria aucta. *B. & Br.* "Appendiculate Alder Sphæria."

Scattered, covered; perithecia globose, collapsed, minutely tomentose, neck oblique, constricted below, confluent with the shortly fusiform ostiolum; asci large; sporidia oblong-elliptic, appendiculate at either end, 1-3 septate.—*B. & Br. Ann. N.H. no. 628, t. 10, f. 11. Fckl. ers. no. 1998. Calospora aucta, Fckl. Sym. Myc. p. 191. Cryptospora aucta, Tul. Carp. ii. p. 152.*

On twigs of birch and alder.

Scattered, scarcely visible externally, except from the swelling of the bark above the perithecia. Perithecia globose, obscurely tomentose, soon collapsed. Asci broad, delicate. Sporidia elliptic, with a truncate process at either extremity; at first uniseptate, with an endochrome of the same form as the cells. This eventually is divided into two nuclei, between which a new septum is formed, so that the sporidia have either one or three septa, in which latter case there is a constriction at each articulation.—*B. & Br.*

2663. Sphæria ditopa. *Fr.* "Variable Alder Sphæria."

Scattered; perithecia covered, free, globose, at length collapsed, black; ostiola erumpent; asci polysporous, or octosporous; sporidia hyaline.—*Cryptospora suffusa, var. minor, Tul. Carp. ii. p. 145.*

forma. polyspora. Sporidia crowded, numerous, oblong, narrow, rounded, or somewhat pointed at the ends.—*Sphæria ditopa*, *Fr. S.M.* ii. p. 381. *B. & Br. Ann. N.H.* ix. no. 631. t. 10, f. 15*. *Curr. Linn. Trans.* xxii. t. 58, f. 89. *Fckl. exs.* no. 799. *Cooke exs.* no. 384. *Cryptosphæria ditopa*, *De Not. Schema.*

forma. octospora. Sporidia biseriate, oblong-elliptic, obtuse at either end, biseptate.—*Sphæria conformis*, *B. & Br. Ann. N. H.* no. 635, t. 11, f. 19. *Curr. Linn. Trans.* xxii. t. 58, f. 88.

On dead alder twigs.

Both forms are usually associated together. Messrs. Tulasne consider them as a *minor* condition of *Valsa suffusa*, to which we are at present unwilling to assent without further evidence. The sporidia in the polysporous form are (0006-0007 in.) 015-0177 m.m. long, and in the octosporous form (0007-0008 in.) 0177-02 m.m. long.

* Sporidia mostly fusiform, 4-nucleate or multiseptate, hyaline.

2664. *Sphæria vepriis.* *De Laer.* "Hidden Bramble *Sphæria.*"

Perithecia very small, punctiform, just penetrating the bark with their minute ostiola; sporidia biseriate, colourless, subfusiform, wide in the centre, sides flexuous, usually elongated at each end into a hyaline, mucronate appendage, quadrinucleate.—*Rabh. F.E.* no. 443. *Fckl. exs.* no. 1994. *Sphæria rubi*, *Curr. Linn. Trans.* xxii. t. 58, f. 91. *Sphæria rostellata*, f. *minor*, *Desm. exs.* no. 783. *Diaporthe vepriis*, *Nke. Pyr. Germ.* p. 300.

On bramble. Sept. Weybridge.

2665. *Sphæria sepincola.* *Fr.* "Hidden stem *Sphæria.*"

Gregarious; perithecia covered, globose, opaque, subrugose, white within, with a central nucleus, pierced with a simple ostiolum; asci slender, clavate; sporidia biseriate, oblong, subfusiform, hyaline.—*Fr S.M.* ii. p. 498. *Eng. Fl.* v. p. 271. *B. & Br. Ann. N.H.* no. 636*. t. 11, f. 21. *Fckl. exs.* no. 2026. *Cooke exs.* no. 263. *S. Gardneri*, *Berk. Fl. Forf.*

On various plants.

[Up. Carolina.]

Fuckel describes the sporidia as triseptate.

2666. *Sphæria persistens.* *B. & Br.* "Persistent rose *Sphæria.*"

Scattered, adnate to the wood, at length exposed by the decay of the bark, and naked, subglobose; ostiola minute, dis-

ting; asci clavate; sporidia biseriate, hyaline, fusiform, constricted in the centre, curved, with four sporidiola.—*B. & Br. Ann. N.H. no. 637, t. 11, f. 22.*

On dead shoots of rose. Mar. King's Cliffe.

Scattered over the branches, and so immersed in the bark as not to form any pustules, exposed and persistent when the matrix is decayed, globose, with a minute distinct ostium. Asci clavate, containing two rows of sporidia. Sporidia hyaline, fusiform, straight when seen from behind, slightly curved when seen laterally, constricted in the centre, each division containing two globose sporidiola.—*B. & Br.*

2667. Sphæria intermixta. *B. & Br.* "Mixed rose Sphæria."

Very minute, scattered, covered with the cuticle, black; perithecia depressed, convex above, perforated; asci clavate; sporidia biseriate, hyaline, clavato-fusiform, triseptate.—*B. & Br. Ann. N.H. no. 639, t. 11, f. 24.*

On rose twigs.

Mixed with *S. fuscella*, but smaller. Scattered, seated beneath the cuticle; perithecia very minute, convex, depressed, perforated in the centre, black; asci clavate; sporidia biseriate, hyaline, clavato-fusiform, triseptate. The asci are large for the size of the perithecia.—*B. & Br.*

2668. Sphæria pusilla. *Curr.* "Parallel little Sphæria."

Perithecia small, globose, bursting in somewhat parallel lines through the surface of the wood; sporidia biseriate, colourless, slightly curved, with many nuclei, fusiform.—*Curr. Berk. Outl. p. 399. Sph. seriata, Curr. Linn. Trans. xxii. p. 329, t. 59, f. 121.*

On wood.

Sporidia (0008 in.) 02 m.m. long.

2669. Sphæria Ashwelliana. *Curr.* "Covered Fir Sphæria."

Perithecia? sporidia uniseriate or biseriate, colourless or greenish, elliptical, mostly pointed at each end, slightly constricted in the middle, 1-4 septate, hyaline.—*Curr. Linn. Trans. xxii. p. 327, t. 59, f. 107.*

On fir branches. Oct. Weybridge.

Sporidia (0010-0014 in.) 025-035 m.m. long.

2670. Sphæria clypeata. *Nees.* "Shining capped Sphæria."

Gregarious; perithecia depressed, covered with the innate, blackened epidermis; ostiola emergent, conico-truncate; asci

linear; sporidia uniseriate, oblong 4-5 septate.—*Nees. f.* 355.
Eng. Fl. v. p. 270. *B. & Br. Ann. N.H.* no. 888*.

On bramble, *Epilobium*, &c.

Easily known by the shining black spots of the epidermis, which cover the perithecia, and by its neat appearance. Sporidia ('0008 in.) '02 m.m. long. *S. clypeata*, *Fr. S.M.* ii. p. 487. *Fries exs.* no. 398, appears to be different (*B. & Br. Ann. N.H.* no. 613.)

2671. Sphæria melina. *Br. & Br.* "Brown stained Sphæria."

Sub-cuticular, globose; ostiola minute; asci sub-linear; sporidia uniseriate, cymbiform, triseptate.—*B. & Br. Ann. N.H.* no. 888, t. 11, f. 33.

On dead ash twigs. Mar. Batheaston.

Perithecia immersed in the bark, which is stained brown immediately above them, piercing the cuticle by a minute ostiolum; asci elongated, linear, obtuse; sporidia uniseriate, subcymbiform when seen laterally, triseptate ('0009 in.) '022 m.m. long.

* * Sporidia coloured, bilocular.—*Amphisphæria*, *de Not.*

2672. Sphæria dochmia. *B. & Br.* "Gouty Sphæria."

Scattered, covered; perithecia solitary, ovate, oblique, at length collapsed; neck very short, constricted; ostiola flattened; asci cylindrico-clavate, obtuse; sporidia biseriate, oblong, slightly curved, at length uniseptate, hyaline.—*B. & Br. Ann. N.H.* no. 630, t. 10, f. 13.

On dead elm twigs. Jan. Batheaston.

Scattered over the twigs, visible externally from the swellings caused by the perithecia; perithecia somewhat ovate, oblique, collapsed when dry, neck extremely short and somewhat constricted; ostiolum, broad, obtuse, perforated in the centre; sporidia oblong, very obtuse, slightly curved, at length uniseptate.—*B. & Br.*

2673. Sphæria trivialis. *B. & Br.* "Common Twig Sphæria."

Scattered, covered; perithecia depressed, minute; ostiola obsolete; asci large, clavate, obtuse; sporidia elliptic, uniseptate.—*B. & Br. Ann. N.H.* no. 632, t. 10, f. 16.

On dead twigs. Feb. Batheaston.

Scattered, covered by the cuticle, which appears brownish over each perithecium, but is really colourless; perithecia depressed, elliptic; ostiola obsolete; asci broad, clavate, containing eight broadly elliptic, uniseptate sporidia.—*B. & Br.*

2674. Sphæria futilis. B. & Br. "Blackened rose Sphæria."

Scattered, covered by the blackened cuticle; perithecia subglobose; asci linear; sporidia uniseriate, short, oblong-elliptic, uniseptate.—*B. & Br. Ann. N.H. no. 638, t. 11, f. 23.*

On dead rose twigs. Mar. King's Cliffe.

Minute, scattered, covered by the blackened cuticle, so as to present little black specks. Asci linear; sporidia uniseriate, short, oblong-elliptic, hyaline, sometimes slightly constricted in the centre, uniseptate. The septum appears to be continued through the external as well as the internal membrane. The sporidia have much the form which is so common in *Diplodia*.

2675. Sphæria oblitescens. B. & Br. "Covered Cornel Sphæria."

Perithecia depressed, covered; ostiola obscure; asci linear, elongated; sporidia oblong-elliptic, very obtuse, uniseptate.—*B. & Br. Ann. N.H. no. 887, t. 11, f. 32.*

On dead twigs of *Cornus*. Jan. Spye Park.

Perithecia covered by the cuticle, depressed, moderately large; asci cylindrical, elongated; sporidia uniseriate, oblong-elliptic, very obtuse, uniseptate, slightly constricted at the commissure ($\cdot 0005$ in.) $\cdot 0125$ m.m. long; paraphyses linear, some of them containing one or two sporidia. The cuticle is occasionally discoloured above the perithecia.—*B. & Br.*

2676. Sphæria epidermidis. Fr. "Common brown-spored Sphæria."

Scattered; perithecia covered, prominent, even, small, at length collapsed and plane, astomous; sporidia uniseptate, of two apposed, rather irregular cones, coloured.—*Fries. exs. no. 19 (partly) Berk. Ann. N.H. no. 186. B. & Br. Ann. N.H. no. 639*. Curr. Linn. Trans. xxii. t. 59, f. 119. Fckl. exs. no. 1770. Didymosphæria epidermidis, Fckl. Sym. Myc. p. 141. Sphæria araucariæ, Cooke Seem. Journ. Bot. iv. (1866), t. 45, f. 12.*

On privet, elder, bramble, &c. [Low. Carolina.]

Very variable, especially in the size of the sporidia. A form occurs on bramble stems with the asci usually tetrasporous (*Cooke Seem. Journ. 1866, iv. t. 45, f. 10*). Sporidia ($\cdot 0004$ in.) $\cdot 01$ m.m. long.

2677. Sphæria diplospora. Cooke. "Twin-spored Bramble Sphæria."

PYCNIDIA.—Perithecia scattered, covered with the epidermis, prominent, subglobose, black; stylospores elliptical, dark-brown, rather opaque, uniseptate.—*Diplodia rubi, Fr. S.V.S. p. 417. Fckl. exs. no. 536. Cooke Seem. Journ. (1866), iv. no. 33.*

ASCOPHORE.—Erumpent, cæspitose; perithecia subglobose, papillate, bursting through elongated fissures in the bark, black; asci elongated, cylindrical; sporidia uniseriate, elliptic, uniseptate, brown.—*Cooke Seem. Journ.* (1866), iv. t. 45, f. 7. *Didymosphæria rubi*, *Fckl. Sym. Myc.* p. 141 (1869). *Sphæria epidermidis*. Fr. var. *rubi*, *Auct.*

On bramble.

Sometimes the perithecia are arranged in short lines.

2678. Sphæria appendiculosa. *B. & Br.* “Appendiculate Sphæria.”

Perithecia scattered, globose, nestling under the blackened epidermis in small orbicular polished spots, pierced in the centre; sporidia ovate-lanceolate, appendiculate.—*B. & Br. Ann. N.H.* no. 613, t. 7, f. 20. *Curr. Linn. Trans.* xxii. t. 58, f. 97.

On dead bramble.

Perithecia globose, scattered, nestling under small orbicular, black shining specks, and penetrating them by the ostium, round which there is often a little white meal; sporidia ovato-lanceolate, at first hyaline with an apiculate process which gradually separates by a constriction, and ultimately falls off. Resembling closely *S. tomicum*, Lev. but differing materially in the much larger and more highly developed sporidia.—*B. & Br.* Sporidia (‘001 in.) ‘025 m.m. with the appendage.

*** Sporidia coloured, with 3, or more septa.

2679. Sphæria fuscella. *B. & Br.* “Brown Rose Sphæria.”

Scattered, covered; perithecia brown, depressed; asci linear, obtuse; sporidia uniseriate, oblong-elliptic, sometimes slightly curved, triseptate.—*B. & Br. Ann. N.H.* no. 636, t. 11, f. 20. *Curr. Linn. Trans.* xxii. t. 59, f. 103.

On dead twigs of rose. March. Easton.

Scattered, forming minute pustules; perithecia depressed, subglobose, brown; asci linear, containing eight sporidia in a single row; sporidia pale brown, oblong-elliptic, obtuse, triseptate, by no means constricted at the articulation, sometimes slightly curved. Distinguished from *S. septicola* by its minute brown perithecia, and even elliptic obtuse sporidia. There is no sign of ostium externally.—*B. & Br.* Sporidia (‘0007 in.) ‘0177 m.m. long.

2680. Sphæria unicaudata. *B. & Br.* “One-tailed Sphæria.”

Perithecia minute, covered, subglobose, collapsing; sporidia clavate, quadrisepate, caudate.—*B. & Br. Ann. N.H.* no. 886, t. 11, f. 31.

On *Clematis vitalba*. Batheaston.

Scattered beneath the cuticle, subglobose, collapsed when dry; asci oblong, varying in form according to the pressure of the sporidia; sporidia ('0015 in.) '035 m.m. long, clavate, triseptate, the upper articulation hyaline, the three following brownish, often containing a globose nucleus, appendage, or fifth articulation hyaline, gradually tapering or constricted near the tip. Very rarely there are four brown articulations.—*B. & Br.*

2681. Sphæria tamaricis. *Grev.* "Tamarisk Sphæria."

Scattered under the epidermis, which is very convex and ruptured in the centre; mouth very short, obtuse, not exerted; sporidia rather dark brown, triseptate, slightly curved.—*Grev. t.* 45. *Eng. Fl.* v. p. 270. *Curr. Linn. Trans.* xxii. t. 58, f. 81.

On dead branches of Tamarisk.

Perithecia globose, slightly depressed, their black colour appearing through the epidermis.—*M.J.B.* Sporidia ('0008 in.) '02 m.m. long.

2682. Sphæria eustegia. *Cooke.* "Collapsing Willow Sphæria."

Perithecia scattered, subglobose, then depressed; ostiola elevating and piercing the cuticle, at length collapsing, and resembling a *Stegia*; asci cylindrical; sporidia uniseriate, fusoid, mostly triseptate, sometimes with 4 or 5 septa, occasionally one of the cells is transversely divided, pale brown.—*Cooke exs. no.* 387. *Valsa tetratrupha*. var. *simplex*, *Seem. Journ. Bot.* (1866). t. f. 20.

On willow twigs.

2683. Sphæria abbreviata. *Cooke.* "Short saccate Sphæria."

PYCNIDIA.—Perithecia commonly scattered over bleached spots, small, black, and prominent, covered by the epidermis; stylospores elliptical, triseptate, brown, slightly constricted at the septa.—*Hendersonia rosæ*, *Westendorp Bull. De Brux.* ii. no. 9. *Cooke Seem. Journ.* (1866). no. 36.

ASCOPHORE.—Perithecia minute, in short parallel lines, convex, papillate, at length perforated; asci short, broadly elliptic; sporidia crowded, oblong, triseptate, torulose, brown.—*Cooke Seem. Journ.* (1866) iv. t. 45, f. 6.

On dead stems of bramble. Jan.—April.

Forming distinct, and visible, short parallel lines, but not confluent; asci very short and broad, elliptical, pyriform or obovate; sporidia crowded together, oblong, triseptate, slightly torulose, pale brown when mature; the linear disposition of the perithecia forming short lines of black dots, and the short, broad, nearly obovate asci are very characteristic. The stylosporous form often accompanies the ascigerous.

2684. **Sphæria tomicum.** *Lev.* "Brown-spored Grass
 Sphæria."

On *Aira caespitosa* and *Juncus*. Jan. Batheaston.

Sporidia (.0004-.0006) .01-.015 m.m. long.

Perithecia free, distinct, seriate, when collapsed umbilicate beneath, nestling under a blackish, lanceolate, even, slightly swollen spot of the epidermis.—*Moug. exs. no. 668. Fr. Fl. ii. p. 105. Cooke exs. no. 273. Eng. Fl. v. p. 273. Berk. exs. no. 37. Fckl. exs. no. 905. Diaporthe lirella, Fckl. Sym. Myc. p. 206.*

On dry stems of *Spiræa ulmaria*.

Having scarcely the appearance of a Sphæria when viewed externally, but when the epidermis is removed the free distinct perithecia, hollowed out at the base, immediately become visible.—*M.J.B.*

Perithecia small, subglobose, flattened, concealed by the epidermis, piercing it with the sharp pointed ostiola; sporidia biserial, or crowded, colourless, narrowly cylindrical, with rounded ends or acuminate and almond-shaped.—*Curr. Linn. Trans.* xxii. p. 325, t. 58, f. 93.

On dock.

Sporidia (.0003-.0004 in.) .0075-.01 m.m. long; endochrome 2-4 partite.

Spots orbicular, few, grey; perithecia scattered, subglobose; ostiola punctiform; sporidia oblong, elongated, curved, 6-7 septate.—*B. & Br. Ann. N.H. no. 641**. *Sow. t. 394, f. 9 (not Desm. exs. no. 1784)*.

On *Scirpus lacustris*.

Considered in Eng. Fl. as a variety of *S. scirpicola*, but separated on account of its external appearance, and by the sporidia being very much longer and with more than twice the number of septa.

2688. Sphæria hyphenis. *Cooke.* "Hyphen Fern Sphæria."

Forming short parallel lines; perithecia minute, subglobose, raising and at length cracking the cuticle, black, in short lines; ostiola acute, sometimes piercing the cuticle; sporidia biseriate, or clustered, elliptic, uniseptate, slightly constricted, the upper cell somewhat swollen, hyaline.

On stems of *Pteris aquilina*. May. Shere. (Dr. C.)

Easily confounded with small forms of *Dothidea filicina*, but the lines are less distinct, and, on removing the cuticle the perithecia are decided. Quite distinct from *S. pantherina*, to which it is allied.

2689. Sphæria pantherina. *Berk.* "Panther-spot Sphæria."

Spot-like, bounded by a flexuous, subelliptic line; perithecia immersed, furnished with a long neck and slightly prominent ostium; asci lanceolate; sporidia oblong, subfusiform, with two or more obscure septa.—*Berk. exs. no. 34. Mag. Zool. & Bot. no. 23.*

On *Pteris aquilina*.

At first sight resembling *S. pardalota*. It differs, however, in the immersed perithecia and the elongated neck. The line is not always visible externally, but it may always be found on making a transverse section, being in fact the edge of a true conceptaculum. When the line is visible externally the cuticle is nearly unaltered, when, on the contrary, it is obscure the cuticle has a brown burnt appearance.—*M. J. B.*

The stylospores of this species are fusiform and extremely narrow, .0008-.001 in. long (see *Curr. Linn. Trans. xxii. p. 285*).

2690. Sphæria pardalota. *Mont.* "Leopard-spot Sphæria."

Spot-like, limited by a flexuous line, covered by the cinereous cuticle; perithecia scattered, hemisphærico-compressed, black; stroma cinereous, incumbent, soon rimosely erumpent; asci clavate; sporidia fusiform, biseptate.—*Mont. Ann. Sc. Nat. i. p. 304, t. 12, f. 1. Berk. exs. no. 175. Fckl. exs. no. 1575. Mag. Zool. & Bot. no. 99. Diaporthe pardalota, Fckl. Sym. Myc. p. 206.*

On dead stems of *Convallaria multiflora*.

The stylospores of this species are colourless, rather narrowly elliptical (.0002-.0004 in.) .005-.01 m.m. long (see *Curr. Linn. Trans. xxii. p. 285*).

2691. Sphæria ceuthosporoides. *Berk.* "Two-faced Sphæria."

Stroma formed of the parenchyma of the matrix, suborbicular, reddish-brown, circumscribed by a narrow distinct black line penetrating the leaf; perithecia 6-10 scattered, covered, projecting on either surface, their apices seated on the upper surface of

the leaf, which is at length pierced with minute round orifices ; asci oblong, distinct, containing several oblong, septate sporidia. *Berk. Eng. Fl.* v. p. 258. *Ann. N.H.* no. 179.

On leaves of cherry laurel. Aug. Near Edinburgh.

Spots $1\frac{1}{2}$ - $2\frac{1}{2}$ lines broad, completely penetrating the leaf so as to present nearly the same appearance on either side. Perithecia apparently epiphyllous, but projecting almost equally on both surfaces of the stroma.—*M.J.B.*

c. *Caulicolæ.*

Perithecia at first covered, at length naked by the falling away of the epidermis. On herbaceous stems.—*Fr. S.M.* ii. p. 322.

A. Sporidia multicellular=(*Pleospora*, *Rabh.*)

2692. *Sphæria herbarum.* *Pers.* "Common herbaceous *Sphæria.*"

CONIDIA.—Tufts effused, soft, dense, green, then olive-black ; flocci collapsing, pellucid, as well as the olivaceous, at length uni-septate conidia.—*Cladosporium herbarum*, *Link. sp.* 1, p. 39. *Eng. Fl.* v. p. 338. (See no. 1744, ante.)

MACROCONIDIA.—Flocci suberect, delicate, fugacious, slightly branched ; macroconidia clavate, at length subrectangular, multiseptate, constricted.—*Macrosporium sarcinula*, *B. & Br. Ann. N.H.* no. 125, t. 8, f. 10. (See no. 1731, ante.)

PYCNIDIA.—Stylospores very minute, oblong, pale vinous red, discharged in slender tendrils.—*Myxosporium orbiculare*, *Berk. Outl.* p. 325. *Cytispora orbicularis*, *B. Ann. N.H.* no. 106, t. 7, f. 6. (See no. 1407, ante.) On gourds.

STYLOSPORES.—Perithecia numerous, small, subrotund, brown ; ostiola poriform ; stylospores oval, hyaline, with one or two spores.—*Phoma herbarum*, *West. Act. Belg.* xix. p. 118. *Rabh. F. E.* no. 455.

ASCOPHORE.—Subgregarious, minute, black ; perithecia generally covered, globoso-depressed, even ; ostiolum slightly prominent, punctiform ; sporidia oblong-elliptic, yellow, then brown, multicellular.—*Pers. Syn.* p. 79. *Fr. S.M.* ii. p. 511. *Berk. exs.* no. 267. *Fries. exs.* no. 38. *Eng. Fl.* v. p. 276. *Curr. Linn. Trans.* xxii. t. 59, f. 138. *Pleospora herbarum*, *Rabh. F.E.* no. 145. *Tul. Carp.* ii. p. 262, t. 32. *Fckl. exs.* no. 811. *Cooke exs.* no. 261.

On herbaceous stems. Common.

[United States.]

var. α. Pisi. On pea stems. *Sphæria pisi*, Sow. t. 393, f. 8. *Eng. Fl.* v. p. 275. *Berk. exs.* no. 183. *Curr. Linn. Trans.* xxii. t. 60, f. 131. *Pleospora pisi*, Fckl. *Sym. Myc.* p. 131. *Fckl. exs.* no. 899.

var. β. Scrophulariæ. On *Scrophularia* stems and capsules. *Sphæria Scrophulariæ*, *Eng. Fl.* v. p. 276. *Pleospora scrophulariæ*, Rabh. *Cooke exs.* no. 376.

var. γ. Leguminum. On pods of beans, vetches, *Colutea*, &c. *Pleospora leguminum*, Rabh. *exs.* no. 548. *Fckl. exs.* no. 2129.

The sporidia are very variable in size, but we see no reason for splitting up this species in the manner that some authors have proposed.

2693. Sphæria infectoria. *Fckl.* "Straw Pleospora."

Perithecia disposed in lines, rarely solitary, always covered, at length cracking the cuticle, minute, globose, black, staining the straw; asci cylindrical, stipitate; sporidia uniseriate, ovate-oblong, obtuse, five-septate, and muriform, slightly constricted, yellowish.—*Pleospora infectoria*, *Fckl. Sym. Myc.* p. 132, t. 3, f. 23, *Fckl. exs.* no. 2246. *Pleospora culmorum*, Cooke MSS.

On straw of *Ammophila arundinacea*. May. Shere. (Dr. Capron.)

Sporidia (·0008·001 in.) ·02·025 m.m. long.

B. Sporidia coloured, not muriform.

2694. Sphæria lunariæ. *B. & Br.* "Honesty Sphæria."

Gregarious; perithecia black, subglobose; ostiola papillæform, soon piercing the cuticle; asci linear; sporidia biseriate, oblong, triseptate.—*B. & Br. Ann. N.H.* no. 892, t. 11, f. 36.

On dried pods of *Lunaria rediviva*.

Gregarious, minute, black, subglobose, piercing the cuticle by the papillæform ostiolum; asci short, linear, obtuse; sporidia (·001 in.) ·025 m.m. long, biseriate, oblong, acute or obtuse, very slightly curved, triseptate, articulation slightly torulose.—*B. & Br.*

2695. Sphæria Clivensis. *B. & Br.* "Brown spored herb Sphæria."

Covered, subglobose; ostiola minute, perforating; asci elongato-clavate; sporidia oblong, curved, slightly, obtuse at either end, triseptate, brown.—*B. & Br. Ann. N.H.* no. 643, t. 11, f. 29. *Cooke exs.* no. 386. *Curr. Linn. Trans.* xxii. t. 59, f. 136.

On dead stems of parsnips, &c. July.

Entirely covered, with the exception of the minute ostiolum, which penetrates the cuticle. Perithecia subglobose; asci clavate, elongated; sporidia biseriate, oblong, slightly curved, very obtuse triseptate, sometimes constricted at the articulations, dark brown. Allied to *S. herbarum*, but with different fruit.—*B. & Br.*

Sporidia (·0006-·0008 in.) ·015-·02 m.m. long.

2696. Sphæria glæospora. *B. & Curr.* "Wormwood Sphæria."

Perithecia globose, depressed, growing beneath the cuticle; ostiola papillæform; sporidia oblong-cymbiform, quadrisepate, articulations torulose.—*Ann. N.H. no. 980, t. 17, f. 33.*

On dead stems of *Artemisia absinthium*. Fleetwood.

Perithecia subcuticular; ostiola papillæform, black; asci clavate; sporidia (·001-·0012 in.) ·025-·03 m.m., biseriate, quadrisepate, oblong, somewhat cymbiform, joints swollen, endochrome of a pale golden-brown.—*B. & Br.*

2697. Sphæria tenebrosa. *B. & Br.* "Burdock Sphæria."

Scattered, covered by the cuticle and subjacent cells; perithecia depressed; asci large, cylindrico-clavate; sporidia brown, bipartite, articulations subconic, with two endochromes.—*B. & Br. Ann. N.H. no. 649, t. 12, f. 35.*

On dead stems of *Arctium*, which are blackened thereby. May. King's Cliffe.

Perithecia scattered, irregularly covered by the cuticle and subjacent cells, which are traversed by dark, cellular mycelium, which here and there gives rise to short toruloid threads. Asci large, cylindrical, obtuse, slight, attenuated below. Sporidia biseriate, composed of two apposed irregular cones, which contain at first a single large globule, but at length have two irregular endochromes. Remarkable for its curious mycelium and large sporidia.

2698. Sphæria palustris. *B. & Br.* "Tailed spore Sphæria."

Covered; perithecia globose; ostiola minute, papillæform, at length opening with a round aperture; asci linear; sporidia elliptic, slightly curved, uniseptate, appendiculate at either end.—*B. & Br. Ann. N.H. no. 654, t. 12, f. 39.*

On dead leaves of *Iris*, *Carex*, &c. Dec.

Scattered, completely covered by the cuticle, globose at first, with a minute papillæform ostiolum, at length opening with a regular round aperture, the edges of which adhere closely to the matrix. Asci linear; sporidia uniseriate, or rarely biseriate, from slipping over each other, cymbiform, brown, uniseptate, furnished at either end with a hyaline appendage, rather shorter than the joints, at length ejected, and forming a brown border to the ostiolum. Sometimes the two cells of the sporidia appear like two apposed cones.—*B. & Br.*

2699. Sphæria phæosticta. *Berk.* "Dark spored sedge Sphæria."

Gregarious; perithecia globose, black, covered with the browned epidermis; ostiola rather prominent, punctiform; asci linear; sporidia very dark brown, subcymbiform.—*Berk. Antarct, Fl. Crypt. p. 59, t. 68, f. 4. B. & Br. Ann. N.H. no. 651, t. 12, f. 38. Curr. Linn. Trans. xxii. t. 59, f. 127.*

On *Carex pendula*.

The sporidia are brown (·0004 in.) ·01 m.m. long. Perithecia minute, punctiform, seated beneath small brown spots, which are distinctly visible to the naked eye. Asci at first short, and the sporidia pellucid, at length the asci become linear, and the sporidia brown, with a large globose nucleus, rarely a septum is formed after the sporidia have acquired their colour.

c. Sporidia linear, hyaline=(*Raphidospora*, *De Not.*)

2700. Sphæria rubella. *Pers.* "Red spot Sphæria."

Scattered; perithecia erumpent, sub-depressed, at length black; surrounded by a red stain; ostiolum conic; sporidia filiform, length of the ascus, colourless, or yellowish.—*Pers. Syn p. 63. Nees. f. 353. Berk. exs. no. 252. Cooke exs. no. 274. Fr. S.M. ii. p. 506. Fries exs. no. 240. Fckl. exs. no. 787. Eng. Fl. v. p. 274. Tode f. 72. Curr. Linn. Trans. xxii. t. 59, f. 136. Raphidospora rubella, Fckl. Sym. Myc. p. 135. Leptospora rubella, Rabh. exs. no. 532.*

On herbaceous stems. Common. [Low. & Mid. Carolina.]

Easily known by the reddish or purple spot which covers the portion of the stem on which the sphæria is produced, and which sometimes stains the perithecia. Sporidia (·007-·008 in.) ·177-·2 m.m. long.

2701. Sphæria urticæ. *Rabh.* "Nettle Sphæria."

Perithecia scattered, or aggregated, black, covered by the cuticle; ostiola erumpent, pierced, gaping; asci cylindrical, straight or curved; sporidia the length of the ascus, filiform, articulated, yellowish.—*Rhaphidospora urticæ, Rabh. exs. no. 745. Fckl. exs. no. 1759. Fckl. Sym. Myc. p. 125.*

On nettle stems. Shere. (Dr. Capron.)

The mouth of the perithecium is large and open, looking like a minute *Peziza*. There are no red spots, as in *S. rubella*, which the fruit resembles, but the perithecia differ considerably. Sporidia (·008 in.) ·2 m.m. long.

2702. Sphæria acuminata. *Sow.* "Thistle Sphæria."

Gregarious; perithecia sub-immersed, ovate, black; ostiola erumpent, conical, acute; sporidia linear, very long, at length

multiseptate.—*Fr. S.M.* ii. p. 506. *Berk. Ann. N.H.* no. 189, 639*, t. 11, f. 26. *Sow. t.* 394, f. 3. *Curr. Linn. Trans.* xxii. t. 59, f. 133. *Cooke exs.* no. 264. *Sphæria carduorum*, *Wallr. Fl. Germ.* iv. p. 805. *Rhaphidospora carduorum*, *Tul. Carp.* ii. p. 256. *Fckl. Sym. Myc.* p. 125. *Fckl. exs.* no. 786. *Rhaphidospora disseminans*, *Fckl. exs.* no. 780. *Ophiobolus disseminans*, *Reiss. Hedw.* 1854, no. 6.

On thistles and burdock. Common. [Up. & Mid. Carolina.]

The sporidia at first contain numerous nuclei without articulations, later, however, the articulations are very manifest, about twenty. One articulation swollen, usually the second.

2703. Sphæria ulnaspora. *Cooke.* "Bent-spored nettle Sphæria."



Fig. 396.

Perithecia scattered, covered by the cuticle, depressed, black; mouth large, piercing the cuticle; asci cylindrical; sporidia linear, length of the ascus, unequally triseptate and constricted; joints becoming 2-3 or more septate, without constriction, bent angularly when free, twisted in the ascus, hyaline, yellowish.

On nettle stems. Shere.

The perithecia are large and flattened, after the manner of *S. dolium*, covered by the cuticle, through which they are visible when moist, scarcely when dry. The sporidia are very curious, being twisted near the apex of the ascus, when free they are bent angularly, like a knee joint, with two or three constricted septa at unequal distances. Quite distinct from the fruit *S. acuminata*, and very different from that of *S. coniformis*.

(Fig. 396, sporidium.)

2704. Sphæria herpotricha. *Fr.* "Hairy Grass Sphæria."

Scattered; perithecia free, subconical, black, covered with decumbent brown hairs; ostiolum subpapillæform; asci long, clavate; sporidia acicular, very long, containing numerous sporules.—*Fr. S.M.* ii. p. 504. *Fries. exs.* no. 52. *Rhaphidospora herpotricha*, *Tul. Carp.* ii. p. 255. *Fckl. Sym. Myc.* p. 125. *Rhaphidospora Lacroixii*, *Mont. Syll.* p. 251. *Fckl. exs.* no. 781.

On dead grass stems, and on *Carices*.

Sporidia probably at length multiseptate. The hairs of the perithecia on *Carices* are rigid and erect, but the species is evidently the same.

2705. Sphæria eucrypta. *B. & Br.* "Hidden Sedge Sphæria."

Covered; perithecia ovate, delicate, springing from scattered, branched threads; neck very short; asci clavate; sporidia linear-fusiform, with several irregular endochromes.—*B. & Br. Ann. N.H. no. 652, t. 12, f. 40.*

On leaves of *Carex pendula*. Jan. Batheaston.

Scarcely visible unless the leaf is held up to the light. Perithecia delicate, ovate, with a very short neck and round aperture, like a little India rubber bottle, springing from threads which are mostly branched at right angles. Asci very delicate, clavate. Sporidia (.05 in.) .127 m.m., linear-fusiform, with several endochromes, varying much in size. This species is very liable to be overlooked unless the leaves chance to be saturated with moisture.—*B. & Br.*

2706. Sphæria helicospora. *B. & Br.* "Spiral spored Sphæria."

Covered; perithecia subglobose; asci clavate; sporidia linear, very long, spirally involute.—*B. & Br. Ann. N.H. no. 653.*

On leaves of *Cyperaceæ*. West of England.

Distinguished by its extremely long spirally disposed sporidia, which resemble those of *Hysterium apiculatum*.—*B. & Br.*

2707. Sphæria cariceti. *B. & Br.* "Long-spored grass Sphæria."

Perithecia subglobose, immersed, minute; ostiola punctiform; asci clavate; sporidia biseriate, linear, curved, acute at each extremity.—*B. & Br. Ann. N.H. no. 983, t. 17, f. 35.*

In marshy ground, on *Aira cæspitosa*. Dec.

Sporidia (.003-.004 in.) .075-.1 m.m. long.

D. Sporidia fusiform multiseptate=(*Leptosphæria*, *De Not.*)

2708. Sphæria acuta. *Moug.* "Cone-shaped Sphæria."

SPERMOGONIA.—Subgregarious; perithecia subglobose, even, black, shining; ostiolum beaked, straight, cylindrical, obtuse; spermatia minute, hyaline, simple.—*Sphæria acuta*, *Fries. exs. no. 118. Eng. Fl. v. p. 274. Aposphæria acuta*, *Berk. Outl. p. 315.*

ASCOPHORE.—Scattered; perithecia conical, even, shining, black; ostiola thick, confluent, obtuse, pierced; sporidia biseriate, yellow, slightly curved, 5-11 septate.—*Moug. exs. no.*

181. *Fckl. exs. no. 900. Cooke exs. no. 265. Sphæria coniformis, Fr. S.M. ii. p. 508. Berk. Ann. N.H. no. 190. Grev. t. 239, f. 1. Curr. Linn. Trans. xxii. t. 59, f. 126. De Not. Schema, p. 48 (not Fckl. Sym. Myc. p. 136.) Fckl. exs. no. 2163. Pleospora acuta, Fckl. Sym. Myc. p. 135.*

On nettle stems. Common. [Mid. & Up. Carolina.]

2709. Sphæria pellita. *Fr.* "Bearded Herb Sphæria."

CONIDIA.—Tufts broadly expanded, dark brown, branches divergent, short; conidia oblong, septate, hyaline, smooth.—*Brachycladium penicillatum, Corda. Ic. ii. t. 10, f. 63. Fckl. exs. no. 57.*

ASCOPHORE.—Gregarious; perithecia conico-rotund, black, encircled with hairs of the same colour; ostiola papillæform; asci clavate; sporidia crowded, multiseptate, fusiform, yellow, with a swollen joint (3rd or 4th).—*Fr. S.M. ii. p. 503. Curr. Linn. Trans. xxii. t. 59, f. 129. Pleospora pellita, Tul. Carp. ii. p. 268, t. 31, f. 10-13. Rabh. exs. no. 749.*

On dead herbaceous stems.

Sporidia (·0015-·0016 in.) ·035-·04 m.m.

2710. Sphæria doliolum. *Pers.* "Constricted Sphæria."

CONIDIA.—Said to be *Periconia byssoides, Pers. Syn. p. 686. Fckl. exs. no. 1626.*

SPERMOGONIA.—Mixed with the ascophores; spermatia minute, hyaline.—*Sphæria suffulta, Nees. Fckl. exs. no. 898.*

ASCOPHORE.—Scattered; perithecia conico-rotund, papillary, black, shining, folded concentrically; sporidia biseriate, yellowish, slightly curved, 3-5 septate, constricted.—*Pers. Ic. & Desc. t. 10, f. 5, 6. Moug. exs. no. 571. Fckl. exs. no. 901. Eng. Fl. v. p. 275. Fr. S.M. ii. p. 509. Fries. exs. no. 321. Berk. exs. no. 290. Curr. Linn. Trans. xxii. p. 329, xxv. p. 259. Cryptosphæria doliolum, Grev. t. 239, f. 2. Baxt. exs. no. 31. Pleospora doliolum, Tul. Carp. ii. p. 276. Fckl. Sym. Myc. p. 135. Leptosphæria doliolum, De Not. Schema, p. 61.*

On herbaceous stems.

[United States.]

var. conoidea. Perithecia conical, truncate; sporidia curved, triseptate.—*De Not. Micro. Ital. dec. ix. f. 7. Sphæria Helenæ, Curr. Linn. Trans. xxii. t. 59, f. 137.*

On herbaceous stems.

Sporidia (.001 in.) .025 m.m. long. In an authentic specimen of Persoon's the sporidia are triseptate, and slightly constricted (F.C.). The second joint of the sporidia in the typical form is sometimes swollen.

2711. Sphæria agnita. *Desm.* "Hemp Agrimony Sphæria."

Scattered, erumpent, soon naked; perithecia minute, sub-globose, flattened at the base, black, somewhat shining, seated on an effused, greyish spot; ostiola papillæform, pierced; asci elongated, stipitate; sporidia fusiform, 5-6 septate, constricted at the middle, pale yellow.—*Desm. Ann. Sc. Nat.* 1851, xvi. p. 313. *Desm. exs. no.* 713. *Fckl. exs. no.* 888. *Cooke exs. no.* 277. *Pleospora agnita*, *Fckl. Sym. Myc.* p. 135. *Leptosphæria agnita*, *De Not. Schema.* p. 61.

On stems of *Eupatorium cannabinum*.

2712. Sphæria alliaræ. *Avd.* "Blackened Sphæria."

PYCNIDIA.—Gregarious; perithecia irregular, convex, soon depressed and concave, rugose, black; stylospores small, oblong, with a sporule at each extremity.—*Phoma lingam*, *Desm. Ann. S.N.* xi. p. 281. *Tode.* ii. p. 51, f. 46. *Desm. exs. no.* 1877. See ante no. 1213.

ASCOPHORE.—Perithecia scattered over an indeterminate, blackened spot, at length free, obtuse, black; ostiola minute; asci somewhat clavate (nearly cylindrical); sporidia fusiform, slightly curved, 3-5 septate, the middle dissepiment often a little constricted.—*Rabh. exs. no.* 261. *Cooke Seem. Journ.* 1866. f. 19. *Sphæria maculans*, *Desm. Ann. Sc. Nat.* vi. 1846, p. 77. *Fckl. exs. no.* 1793. *Pleospora maculans*, *Tul. Carp.* ii. p. 274. *Fckl. Sym. Myc.* p. 135. *Leptosphæria maculans*, *De Not. Schema.* p. 61.

On stems of *Erysimum alliaræ*, &c.

The specific name of *Alliaræ* is retained, instead of *maculans*, previously applied by Desmazieres, to prevent confusion with the *S. maculans* of Sowerby.

2713. Sphæria complanata. *Tode.* "Flattened Sphæria."

SPERMOGONIA.—Scattered; perithecia as in ascophore; spermatia minute, hyaline, simple.—*Aposphæria complanata*, *Berk. Outl.* p. 315.

ASCOPHORE.—Scattered; perithecia sub-globose, even, black, soon collapsed, and then plano-depressed; ostiolum papillæform, persistent; asci cylindrical; sporidia subfusiform, curved, mul-

tiseptate, the second joint swollen.—*Tode. f.* 88. *Fr. S.M.* ii. p. 508. *Fr. exs. no.* 36. *Eng. Fl.* v. p. 275. *B. & Br. Ann. N.H.* no. 644. *Leptosphæria complanata. De Not. Schema*, p. 62.

On herbaceous stems.

[Up. & Mid. Carolina.]

Very variable in size.

2714. Sphæria derasa. B. & Br. "Ragwort Sphæria."

Gregarious, small, black, hemispherical, covered with rigid black hairs, which ultimately disappear—except at the base; asci clavate; sporidia biseriate, fusiform-filiform, slightly curved, with a row of nuclei, at length faintly septate.—*B. & Br. Ann. no.* 639*, *t. xi. f.* 25, *b. S. calva, Johnst. Fl. Berw.*

On ragwort stems. Spring.

One of the articulations of the sporidia is sometimes swollen.

2715. Sphæria vectis. B. & Br. "Iris Sphæria."

Subcuticular; ostiola at length naked; asci short, cylindrical; sporidia oblong, 5 septate, the fourth articulation swollen.—*B. & Br. Ann. N.H. no.* 779, *t. 16, f.* 16. *Leptosphæria vectis, De Not. Schema* p. 62.

On dead leaves of *Iris fœtidissima*.

Covered by the cuticle, which is at length pierced by the black ostiolum, sometimes regularly diffused, sometimes forming little pale patches; asci short, curved, cylindrical; sporidia oblong ($\cdot 0001$ in.) $\cdot 0025$ m.m. long, 5-septate, the fourth joint being much swollen.—*B. & Br.*

2716. Sphæria nigrans. Desm. "Black Grass Sphæria."

Minute, scattered, covered with the blackened epidermis; perithecia globose or subelliptic, depressed, base invested with brownish hairs; ostiola erumpent, papillæform; asci clavate; sporidia fusiform, curved, subhyaline, 5-septate.—*Desm. Ann. Sc. Nat.* 1846. *Exs. no.* 1774. *B. & Br. Ann. N.H. no.* 640, *t. 11, f.* 27. *Leptosphæria nigrans, De Not. Schema* p. 61.

On *Dactylis glomerata*. Feb.

In a certain stage of growth the black stroma-like spots are not visible, but there are merely a few creeping flocci at the base of the perithecia, these gradually increase in number, so as at length to form a thin dark stratum. The species may be recognised in any state by the fusiform spores, the middle joint of which is swollen. Besides the true paraphyses there are jointed threads in the perithecia.—*B. & Br.*

2717. Sphæria Ogilviensis. *B. & Br.* "Ogilvie's Ragwort Sphæria."

Covered; perithecia depressed; ostiola papillæform; asci clavate; sporidia fusiform, bipartite, three endochromes in each cell.—*B. & Br. Ann. N.H. no. 642, t. 11, f. 28. Leptosphæria Ogilviensis, De Not. Schema, p. 61.*

On stems of *Senecio Jacobæa*. Dundee. [Up. Carolina?]

Perithecia scattered, covered by the cuticle, depressed, with a decided, obtuse, papillæform ostiolum; asci clavate; sporidia biserial, fusiform, consisting of two apposed cones, the sides of which are slightly hollowed out, each division containing three endochromes. Externally it resembles *S. herbarum*.—*B. & Br.*

2718. Sphæria modesta. *Desm.* "Figwort Sphæria."

Scattered; perithecia globoso-depressed, minute, at first covered with the epidermis, then naked, black, short, shining; ostiola papillate, obtuse; asci large, clavate; sporidia fusiform, rather obtuse, curved, 4-6 septate, third joint swollen.—*Desm. exs. no. 1786. B. & Br. Ann. N.H. no. 644, t. 11, f. 30. Lib. exs. no. 244.*

On dead stems of *Scrophularia*. May. Glen Isla.

The peculiar character is the swelling out of the third joint of the curved, multiseptate, subfusiform sporidia. Asci clavate and not cylindrical as in *S. complanata*.

2719. Sphæria sabuletorum. *B. & Br.* "Large-spored Grass Sphæria."

Scattered, covered; perithecia subglobose, at length collapsed; ostiola pierced; asci large, cylindrical; sporidia fusiform, nodulose.—*B. & Br. Ann. N.H. no. 650, t. 12, f. 36.*

On dead leaves of *Ammophila arundinacea*. May. Sands of Barrie.

Perithecia scattered, concealed, with the exception of the pertused ostiolum, subglobose, at length collapsed; asci large, rather short, cylindrical, very obtuse; sporidia at first globose or obovate, uniseptate, eventually one joint produces three endochromes, and the other four, the fourth being seated in the centre of the compound fusiform sporidium, and much larger than the rest. There is a constriction between each endochrome.—*B. & Br.*

2720. Sphæria tritorulosa. *B. & Br.* "Willow Herb Sphæria."

Subcuticular, semi-immersed, subglobose; ostiola papillæform; asci elongated; sporidia tritorulose.—*Ann. N.H. no. 778, t. 16, f. 15. Leptosphæria tritorulosa, De Not. Schema, p. 62.*

On dead stems of *Epilobium hirsutum*.

At first covered by the cuticle, then exposed, half immersed; perithecia subglobose, with a papillæform ostiolum; asci cylindrical; sporidia oblong ($\cdot 0006\text{--}0007$ in.) $\cdot 015\text{--}017$ m.m. long, containing three nuclei, and with two constrictions.

2721. Sphæria triglochinicola. *Curr.* "Triglochin Sphæria."

Perithecia minute, subglobose, situate beneath the epidermis, which is pierced by the papillate ostiolum; sporidia biseriate, triseptate, oblong in a front row, curved in a side view, constricted at the septa, yellow.—*Curr. Linn. Trans.* xxiv. p. 158, t. 25, f. 15. *B. & Br. Ann. N.H.* no. 1100.

On carpels and stems of *Triglochin palustre*. Oct. Near Ringmer, Sussex.

Sporidia ($\cdot 0015$ in.) $\cdot 035$ m.m. long, varying slightly.

2722. Sphæria Thwaitesii. *B. & Br.* "Thwaites's Sphæria."

Perithecia minute, convex, flattened at the base, mycelium of very delicate æruginous threads traversing the matrix; asci cylindrical; sporidia oblong-clavate, slightly curved, obtuse, with four endochromes.—*B. & Br. Ann. N.H.* no. 646, t. 11, f. 32.

On stems of *Umbelliferae*. Jan. Bristol.

Perithecia minute, convex above, flattened below, arranged in short lines, seated on the woody fibres, which are traversed and covered with very delicate anastomosing verdigris green threads; asci cylindrical or subclavate, rather short; sporidia biseriate, oblongo-clavate, obtuse at either extremity, slightly curved, containing about four endochromes; in some instances naked, oblong, slightly curved spores, with five endochromes, the gelatinous mass having a pale sea-green tint.—*B. & Br.*

2723. Sphæria echinella. *Cooke.* "Hedgehog Sphæria."

Gregarious, subcuticular; perithecia globose, black, covered with short, rigid black hairs slightly raising, and piercing the cuticle; ostiola obtuse; asci cylindrical; sporidia uniseriate, straight or slightly curved, triseptate, constricted, pale-brown.—*Cooke exs.* no. 267.

On stems of *Atriplex*, &c. Kentish Town.

The perithecia often become exposed by the shelling off of the cuticle, collected in patches of two or three inches in length, but not crowded; wholly or partially surrounding the stem; the cuticle is slightly raised, and punctate with the black ostiola. Sporidia closely resembling those of *S. pulvis-pyrus*.

E. Sporidia simple, or uniseptate, hyaline.

2724. Sphæria curvirostra. *Sow.* "Curved-beak Sphæria."

Gregarious; perithecia covered, ovate, black; ostiola erumpent, equal, smooth, oblique.—*Sow. t. 373, f. 5. Fr. S.M. ii. p. 507.*

On stems of *Umbelliferæ*.

"This is very minute, its spherulæ are imbedded in the plant on which they grow. The mouth is in length nearly twice the diameter of the spherule, standing obliquely."—*Sowerby*.

2725. Sphæria rostellata. *Fr.* "Clustered-beak Sphæria."

Gregarious, black; perithecia covered, subrotund, at length depressed above; ostiola erumpent, cylindrical, or slightly attenuated; asci oblong; sporidia biseriate, oblong, curved, with four nuclei, hyaline.—*Fr. S.M. ii. p. 476. Fr. Obs. i. t. 3, f. 3. Eng. Fl. v. p. 267. Fckl. exs. no. 920. Diaporthe rostellata, Nke. Pyr. Germ. p. 298. Fckl. Sym. Myc. p. 208.*

On branches of rose and bramble.

Minute, growing beneath the epidermis, and having much the habit of *S. acuta* (*coniformis*).

2726. Sphæria cruciferarum. *Desm.* "Crucifer Sphæria."

Scattered; perithecia innate, hemispherical, turgid, even, black, shining; ostiola simple, pierced; asci shortly clavate; sporidia clustered, long-elliptic, uniseptate, hyaline.—*Fr. S.M. ii. p. 525. Desm. exs. no. 985. Berk. Ann. N.H. no. 191.*

On *Erysimum officinale*.

2727. Sphæria superflua. *And.* "Clouded Sphæria."

SPERMOGONIA.—Perithecia half the size of the ascophores; spermatia very numerous, cylindrical, curved, minute.

ASCOPHORE.—Perithecia black, covered by the epidermis; subglobose, pierced, scattered, very numerous; asci fasciculate, oblong, curved; sporidia biseriate, oblong, uniseptate, hyaline.—*Fckl. exs. no. 884. Sphærella superflua, Fckl. Sym. Myc. p. 102. Sphæria nebulosa, Schm. & Kze. exs. no. 54?*

On nettle stems. Shere. (Dr. Capron.)

2728. Sphæria nigrella. *Fr.* "Spotted Angelica Sphæria."

Perithecia subglobose, even, umbilicate, perforated, black, nestling in determinate elongated black spots; sporidia biseriate,

colourless, fusiform; endochrome bipartite.—*Fr. Obs. i. t. 4, f. 2. B. & Br. Ann. N. H. no. 649*. Fr. S. M. ii, p. 512. Curr. Linn. Trans. xxii t. 60, f. 130. Cooke exs. no. 393.*

On *Angelica sylvestris*.

[Mid. Carolina.]

Sporidia ($\cdot 0008$ in.) $\cdot 02$ m.m. long.

2729. Sphæria planiuscula. *B. & Br.* "Flattened Sphæria."

Scattered, somewhat plane; ostiola obscure; asci clavate; sporidia biseriate, oblong, uniseptate, irregularly thickened in the centre.—*B. & Br. Ann. N. H. no. 891, t. 11, f. 35.*

On dead herbaceous stems.

Minute, scattered, covered by the cuticle, depressed, with an obscure ostiolum. Asci clavate; sporidia biseriate, oblong, uniseptate, slightly but irregularly swollen at the commissure, the one articulation generally being more swollen than the other ($\cdot 0006$ in.) $\cdot 015$ m.m. long.—*B. & Br.*

2730. Sphæria commanipula. *B. & Br.* "Capsule Sphæria."

Scattered, at first subglobose, covered, at length denuded, collapsed; ostiola minute; asci cylindrical; sporidia biseriate, short, elliptico-cymbiform, uniseptate.—*B. & Br. Ann. N. H. no. 645, t. 11, f. 31.*

On capsules of *Scrophularia*. May. Forfarshire.

Scattered, at first covered by the cuticle, subglobose, then exposed and collapsed, with a minute papillæform ostiolum, which is, however, sometimes obscure. Asci cylindrical. Sporidia biseriate, elliptico-cymbiform, uniseptate. Sometimes one of the endochromes is decidedly conical, with a constriction about the centre.—*B. & Br.*

2731. Sphæria tosta. *B. & Br.* "Scorched Sphæria."

Perithecia minute, pallid, depressed, covered by the scorch-brown epidermis; asci linear; sporidia uniseriate, short, elliptico-cymbiform, uniseptate.—*B. & Br. Ann. N. H. no. 648, t. 11, f. 34. Cooke exs. no. 266.*

On dead stems of *Epilobium hirsutum*. Feb.

Perithecia depressed, subglobose, pale, concealed under broad spots which look as if they had been scorched, the part of the cuticle above each perithecium being darker. Asci linear. Sporidia uniseriate, short, elliptico-cymbiform, uniseptate, very pale. With somewhat the habit of *S. tomicum*, but very distinct.—*B. & Br.*

2732. Sphæria pinodes. *B. & Blow.* "Pea-stem Sphæria."

Scattered, very minute, sub-hemispherical, depressed, astomous; asci short; sporidia constricted in the middle, uniseptate.—*B. & Br. Ann. N. H. no. 981, t. 17, f. 34.*

On pea stems. Twycross.

An obscure species, with scattered, extremely minute, subhemispherical, depressed, mouthless perithecia; asci short; sporidia ($\cdot 0007$ in.) $\cdot 0177$ m.m. constricted in the middle, uniseptate.—*B. & Br.*

2733. Sphæria corni-sueciæ. *Fr.* “Cornel Sphæria.”

Scattered, shining, jet black, depressed; ostiolum obsolete (asci oblong, curved; sporidia oblong-clavate, uniseptate, hyaline).—*Fries. exs. no. 409. Sph. corni, Sow. t. 370, f. 5. Eng. Fl. v. p. 276. Fckl. exs. no. 912.*

On stems of cornel.

The portion of the stem on which it grows is whitened, and the perithecia which are of a very bright jet black, are almost effused at the base, and often sulcate in the direction of the stem.—*M.J.B.*

Only a *Sphæropsis* (*Curr. Linn. Trans. xxii. p. 330*).

2734. Sphæria duplex. *Sow.* “Uncertain Sphærella.”

Scattered; perithecia immersed, globose, latent, black; ostiola naked, dilated, hemispherical.—*Sph. duplex, Sow. t. 375, f. 4. Fr. S.M. ii. p. 520. Eng. Fl. v. p. 277.*

On stems of *Umbelliferae* and on petioles of *Sparganium*.

An obscure or doubtful species.

d. Foliicolæ.

Perithecia sub-cuticular, innate; ostiola elongated; epiphyllous=*Gnomonia, De Not.*

2735. Sphæria fimbriata. *Pers.* “Fringed-leaf Sphæria.”

SPERMOGONIA.—Spermatia very minute, ovate, simple.

PYCNIDIA.—Stylospores filiform, curved, simple.—*Glæosporium carpini, Desm. Ann. Sc. Nat. 1853, xx. p. 214. Fckl. exs. no. 202.*

ASCOPHORE.—Covered; perithecia crowded, running together into a black tubercle; ostiola erumpent, spinulose, surrounded at the base with a white fringe-like collar; sporidia colourless, curved, simple.—*Pers. Syn. p. 36. Moug. exs. no. 277. Eng. Fl. v. p. 257. Fr. S.M. ii. p. 436. Fries exs. no. 242. Batsch. f. 182. Hoffm. V.C.t. i. f. i. Berk. exs. no. 36. Mamiania fimbriata, De Not. Schema, p. 57. Gnomonia fimbriata, Fckl. exs. no. 882. Cooke exs. no. 163. Cooke L.F. no. 89.*

On leaves of hornbeam. Common.

2736. Sphæria coryli. *Batsch.* "Hazel-leaf Sphæria."

SPERMOGONIA.—Perithecia scutiform; spermatia curved, or vermicular, linear hyaline.—*Leptothyrium coryli*, *Fckl. exs. no.* 1716.

ASCOPHORE.—Covered; perithecia distinct, disposed in a circle; ostiola erumpent, spinulose, surrounded with a white, fringe-like collar; sporidia colourless, simple, ovate, attenuated at each extremity.—*Batsch. f.* 231. *Fr. S.M.* ii. 436. *Fries. exs. no.* 201. *Moug. exs. no.* 877. *Grev. t.* 330. *Eng. Fl.* v. p. 257. *Fckl. exs. no.* 881. *Mamiania coryli*, *De Not. Schema*, p. 57. *Gnomonia coryli*, *Fckl. Sym. Myc. p.* 120.

On living leaves of hazel.

Resembling *S. fimbriata*, but easily distinguished by the distinct perithecia, which are generally disposed in a circle.

2737. Sphæria avellanæ. *Schm.* "Scattered hazel Sphæria."

Scattered, subhemispherical, black, covered with divergent, radiating, greyish-brown hairs; ostiola papillæform, shining-black; asci clavato-cylindrical; sporidia ovate.—*Schm. M.H.* i. p. 64. *Berk. exs. no.* 182. *Ann. N.H.* no. 101. *Fr. S.M.* ii. p. 515.

On dead hazel leaves.

2738. Sphæria tubæformis. *Tode.* "Alder-leaf Sphæria."

SPERMOGONIA= *Leptothyrium cylindrospermum*, *Bon. Rabh. F. E. no.* 678.

ASCOPHORE.—Perithecia subglobose, covered, smooth; ostiolum straight, beaked, nearly equal, earthy-tawny; sporidia biserial or crowded, colourless, elliptical, or subcymbiform.—*Tode f.* 128. *Moug. exs. no.* 280. *Fr. S.M.* ii. p. 516. *Fries exs. no.* 26. *Grev. t.* 335, f. i. *Eng. Fl.* v. p. 277. *Curr. Linn. Trans.* xxii. t. 59, f. 140. *Ceratostoma tubæforme*, *De Not. Schema*, p. 54. *Gnomonia tubæformis*, *Fckl. Sym. Myc. p.* 120. *Fckl. exs. no.* 866.

On dead leaves (alder, &c.) [Mid. Carolina.]

Sporidia (·0005 in.) ·0127 m.m. long.

2739. Sphæria gnomon. *Tode.* "Common Beaked Sphæria."

Perithecia black, erumpent, often collapsed; ostiolum elongated, clavate, straight, black; asci stipitate; sporidia crowded, narrowly fusiform, curved, with numerous nucleoli.—*Tode f.* 125.

Sow. t. 373, f. 6. Fr. S.M. ii. p. 517. Fries exs. no. 285. Grev. t. 335, f. 2. Eng. Fl. v. p. 277. Purt. iii. no. 1521. Berk. exs. no. 38. Cryptosphæria gnomon, Grev. Fl. ed. p. 360. Gnomonia vulgaris, De Not. Schema p. 58. Fckl. exs. no. 867.

On hazel leaves. Winter and early spring.

[Mid. Carolina.]

2740. Sphæria setacea. Pers. "Hair-beaked Sphæria."

PYCNIDIA=*Discosia clypeata*, De Not. *Fres. Beitr. p. 68. Fckl. exs. no. 453. Fckl. Sym. Myc. p. 121, t. 2, f. 23.*

ASCOPHORE.—Perithecia covered, globose; ostiola bristle-like, attenuated, black; sporidia biseriate, colourless or greenish, pointed at each extremity, and often aristate, triseptate when mature.—*Pers. Syn. p. 62. Fr. S.M. ii. p. 518. Fries exs. no. 286. Purt. MSS. Johnst. Fl. Berw. Eng. Fl. v. p. 277. Berk. Outl. p. 401. Berk. exs. 184. Curr. Linn. Trans. t. 59, f. 145. Fckl. exs. no. 871. Wallr. Fl. Germ. p. 802. Gnomonia setacea, De Not. Schema, p. 58. Cooke exs. no. 161.*

var. petiolæ. On petioles of sycamore, &c.—*Sphæria petioli, Fockel. exs. 537. Enum. Fung. Nass. p. 68. De Not. Schema, p. 49. Cooke Journ. Bot. Cooke. exs. no. 162. Gnomonia Cerastis, Reiss. Gnomonia ischnostyla, Fckl. Sym. Myc. p. 121.*

var. epiphyllæ. On leaves of oak, sycamore, maple, &c.—*Sphæria inclinata, Desm. Gnomonia setacea, Fckl. Sym. Myc. p. 121. Cooke L.F. no. 87.*

On the petioles, nerves, &c., of the leaves of various trees, especially *Acer pseudoplatanus*. [Mid. Carolina.]

Sporidia ('0006 in.) '015 m m. long.

2741. Sphæria ariæ. D.C. "Beam-leaf Sphæria."

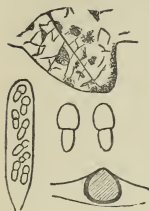
PYCNIDIA=*Discosia artocreas*, *Fr. S.V.S. p. 423 (in Sorbo.)*

ASCOPHORE.—Scattered, minute; perithecia covered, depressed, sub-latent; ostiolum straight, equal, slender, black; asci and sporidia?—*D.C. Fl. Fr. vi. p. 131. Fr. S.M. ii. p. 517. Fckl. exs. no. 877. Gnomonia ariæ, Fckl. Sym. Myc. p. 121.*

On leaves of *Pyrus aria*. Darenth.

The specimens found were immature, the sporidia not being formed, so that the characters cannot be given. The fruit seems to be matured during the winter, whilst the leaves lie on the ground, as in allied species.

Gen. 357.

SPHÆRELLA, De Not.

Perithecia membranaceous, immersed or semi-immersed, scarcely papillate; sporidia elliptical or oblong, two or more celled, rarely simple, hyaline, pale or colourless.—*De Not. Schema*, p. 62. *Sphæria (Foliicolæ)*, *Fr. (in part)*, *Cooke Brit. Fungi. edit. 2*, p. 159.

(Fig. 397.)

Fig. 397.

2742. Sphærella maculæformis. "Patchy Sphærella."

SPERMOGONIA.—Spots minute, rounded, whitish with a brown margin; perithecia 1-3, very minute, innato-prominent, black, pierced; spermatia elongated, very slender, curved.—*Septoria quercina*, *Desm. Ann. Sc. Nat.* 1847, viii. 25. *Fckl. exs. no.* 433.

ASCOPHORE.—Perithecia innate, but slightly prominent, punctiform, globose, black, crowded together into an unequal spot (or scattered); asci small, cylindrical; sporidia uniseriate or biseriate, uniseptate, the lower cell narrower than the upper.—*Cooke Seem. Journ.* 1866, t. 49, f. 7. *Fckl. exs. no.* 817, 1781, 1782, 1783. *Sphæria maculæformis*, *Pers. Syn. p.* 90. *Fr. Sys. Myc.* ii. p. 524. *Berk. Eng. Fl.* v. p. 2, p. 278. *Outl. p.* 401. *Sow. t.* 370, f. 7. *Berk. exs. no.* 338. *Cooke exs. no.* 170. *Cooke L.F. no.* 83. *Johnst. Fl. Berw.* ii. p. 129.

On fallen leaves. Common.

var. β. æqualis. Perithecia cæspitose; sporidia having both cells nearly globose and equal. [United States.]

Sporidia (·0003 in.) ·0075 m.m. long.

2743. Sphærella sparsa. *Awd.* "Scattered Sphærella."

HYPOPHYLLOUS. Perithecia black, innate, more or less densely scattered, or somewhat gregarious, globose; asci cylindrical; sporidia biseriate or uniseriate, obovate-oblong, uniseptate, upper cell broadest, constricted, hyaline.—*Awd. Gonn. & Rabh.* v. p. 4, t. 2, f. 27, 22. *Sphæria sparsa*, *Wallr. p.* 772. *Sphæria corylaria*,

Wallr. p. 770. Cooke L.F. no. 88. Fckl. exs. no. 847. Sphærella maculæformis, var. α. centigrana. Seem. Journ. Bot. (1866) no. 1. Cooke exs. no. 169.

On chesnut and hazel leaves.

2744. Sphærella salicicola. *Fr.* "Willow-leaf Sphærella."

Maculæform or scattered; perithecia innate, punctiform, globose, black, shining; asci cylindrical; sporidia uniseriate or biseriate, uniseptate, hyaline.—*Sphæria salicicola, Fr. S.M. ii. p.*

On leaves of *Salix*. April. Shere. (E. C.)

The perithecia have a very peculiar appearance with their large ostiola. Habit of *S. maculæformis*, but spores twice the size, '0006 in.

2745. Sphærella cratægi. *Fckl.* "Hawthorn Sphærella."

Hypophyllous. Perithecia scattered, or loosely gregarious, black, innate, subglobose, pierced; asci broadly clavate; sporidia fasciculate, elongated, fusiform, obtuse, hyaline, uniseptate.—*Fckl. exs. no. 2162. Gonn. & Rabh. t. 7, f. 94 (imperfect).*

On leaves of hawthorn. Shere. (Dr. Capron.)

Auerswald describes the sporidia as entire, whereas, when mature, they are uniseptate; asci ('002 in.) '05 m.m. long. Sporidia ('0015 in.) '04 m.m. long.

2746. Sphærella oblivia. *Cooke.* "Chestnut Sphærella."

SPERMOGONIA.—Perithecia brownish-black, minute, numerous; spermatia elongated, linear, oozing out in flesh coloured tendrils.—*Septoria castanæcola, Desm.* (See no. 1337, ante.)

ASCOPHORE.—Perithecia semi-innate, black, closely agglomerated in small but dense maculæform spots consisting of from ten to twenty individuals; asci cylindrical; sporidia biseriate, curved, uniseptate, the lower cell the narrowest, slightly yellow.—*Cooke Seem. Journ. (1866) t. 49, f. 8. S. maculæformis (partly) Gonn. & Rabh. v. t. 1, f. 7.*

On the under surface of dead chestnut leaves, mixed with *S. maculæformis*. Darenth Wood, Kent.

Sporidia ('0005-'0006 in.) '0125-'015 m.m. long.

2747. Sphærella arcana. *Cooke.* "Hidden Sphærella."

Perithecia minute, subinnate, either collected in "maculæform" spots or scattered, black and shining; asci broadly fusiform; sporidia crowded, linear, straight, obtuse at the extremi-

ties, uniseptate, each cell containing two small sporules or nuclei.—*Cooke Seem. Journ.* (1866) *t.* 50, *f.* 13. *Sphæria maculæformis* on *Castanea*, *Fckl. exs. no.* 817. *Gonn. & Rabh. v. t.* 8, *f.* 109.

On dead leaves of *Castanea vesca*. Darenth Wood, Kent.

Intermixed with *S. obliqua* and *S. maculæformis*, from which it is quite distinct. Sporidia (·0005 in.) ·0125 m.m. long.

2748. Sphærella simulans. *Cooke.* "Imitative Sphærella."

Perithecia arranged in groups on the under surface; asci cylindrical, containing large sausage-shaped uniseptate sporidia.—*Cooke Seem. Journ.* (1866) *t.* 49, *f.* 12. *Gonn. & Rabh. v. t.* 2, *f.* 23.

On dead oak leaves. Highgate, 1866.

The perithecia are grouped in a similar manner to those of *S. maculæformis*, with which it probably has hitherto been confounded, but from which it may easily be distinguished by the large sausage-shaped, uniseptate sporidia (·0008 in.) ·02 m.m. long.

2749. Sphærella conglomerata. *Wallr.* "Clustered Sphærella."

Hypophyllous, black, innate, densely conglomerated and confluent; spots gregarious, minute; sporidia stipitate, obovate-oblong, uniseptate, scarcely constricted, hyaline.—*Awd. Gonn. & Rabh. v. p.* 5, *t.* 6, *f.* 88. *Sphæria conglomerata*, *Wallr. p.* 814. *Fckl. exs. no.* 832. *Sphæria insularis*, *Fckl. exs. no.* 827. *Stigmatea maculæformis*, *Fckl. exs. no.* 422.

On dead leaves of *Alnus glutinosa*. Gomshall.

2750. Sphærella punctiformis. *Pers.* "Point-like Sphærella."

Scattered; perithecia innate, punctiform, even, rather shining, black, slightly prominent, umbilicate by collapsion; asci minute, clavate; sporidia uniseriate or biseriate, hyaline, elliptical, obtuse at either extremity, granular, greenish-yellow.—*Cooke Seem. Journ.* (1866) *t.* 50, *f.* 14. *Fckl. exs. no.* 816. *Sphærella Cookeana*, *Awd. Gonn. & Rabh. pt. v. p.* 2, *t.* 1, *f.* 6. *Sphæria punctiformis*, *Pers. Syn. p.* 90. *Fr. S.M. ii. p.* 525. *Eng. Fl. v. p.* 279. *Berk. Outl. p.* 401. *Johnst. Fl. Berw. ii.* 130. *Cryptosphæria punctiformis*, *Grev. Fl. Ed. p.* 362 (in part). *Sphæria subconfluens*, *Sow.* (in part.)

On dead leaves. Common.

[United States.]

Length of asci (·0013 in.) ·034 m.m., of sporidia (·00035 in.) ·009 m.m. This appears to be the true *S. punctiformis*, to which other species assimilate in external appearance.

2751. Sphærella punctoidea. *Cooke.* "Dot Sphærella."

Perithecia black, shining, semi-innate, prominent, disposed in little groups of seven or eight on the upper surface of leaves, collapsed and concave when dry; asci cylindrical, curved or flexuose; sporidia uniseriate, elliptical or subcymbiform; hyaline highly refractive and colourless.—*Cooke Seem. Journ.* (1866) *t.* 49, *f.* 9.

On the upper surface of oak leaves. Shere, Surrey. Jedburgh.

Length of asci ($\cdot 0021$ in.) $\cdot 056$ m.m., of sporidia ($\cdot 00045$ in. $\cdot 0125$ m.m. Quite distinct from *S. punctiformis*, with which it has probably been confounded; the asci are cylindrical, the sporidia are longer, and the perithecia are different in habit and disposition, always occurring in small groups and on the upper surface only. *S. maculæformis* often occurs on the under surface of the same leaf.

2752. Sphærella myriadea. *D.C.* "Cloudy Sphæria."

Epiphyllous. Perithecia very minute, numerous, black, aggregated in large unequal cinereous patches; asci subfusiform; sporidia biseriate, elongated, triseptate, pointed at each extremity.—*Cooke Seem. Journ.* (1866) *t.* 49, *f.* 10. *Fckl. exs. no.* 825. *Cooke exs. no.* 172. *Gonn. & Rabh. v. t.* 1, *f.* 9. *Rabh. F.E. no.* 149. *Cooke L.F. no.* 84. *Sphæria myriadea*, *D.C. Fl. Fr. vi. p.* 145. *Duby. Bot. Gall. ii. p.* 710. *Desm. Mem. Soc. Roy. de Lille* 1843. *West. & Wall. exs. no.* 73.

On dead oak leaves. Shere, Surrey. [United States.]

Sporidia ($\cdot 0013$ in.) $\cdot 035$ m.m. long.

2753. Sphærella millegrana. *Cooke.* "Thousand-grain Sphærella."

Epiphyllous. Perithecia scattered, numerous and minute; asci short, cylindrical; sporidia crowded, linear, and uniseptate, the upper cell being ventricose.—*Cooke Seem. Journ.* (1866) *t.* 50, *f.* 15. *Gonn. & Rabh. v. t.* 2, *f.* 17.

On the upper surface of dead leaves of hornbeam. Shere, Surrey.

Perithecia resembling those of *S. myriadea*, but not so closely aggregated, and not collected in definite patches. Sporidia ($\cdot 0006$ in.) $\cdot 015$ m.m. long.

2754. Sphærella latebrosa. *Cooke.* "Sycamore Sphærella."

Hypophyllous. Perithecia scattered over the surface, innate, minute, globose, black, scarcely visible till the epidermis is destroyed by exposure; asci cylindrical, ventricose; sporidia elon-

gated, uniseptate, constricted at the septum, attenuated towards each extremity, with two sporules in each cell.—*Cooke Seem. Journ.* (1866) *t.* 50, *f.* 16. *Gonn. & Rabh. v. p.* 10, *t.* 2, *f.* 26.

On dead leaves of sycamore. Shere, Surrey.

Sporidia (·002 in.) ·05 m.m. long.

2755. Sphærella acerifera. *Cooke.* “Maple Sphærella.”

Hypophyllous. Perithecia scattered, innate, globose, minute, black; asci broadly cylindrical; sporidia large (three times as long as broad), almond-shaped, hyaline, containing two sporules or nuclei.—*Cooke Seem. Journ.* (1866) *t.* 50, *f.* 18.

On dead leaves of *Acer campestre*. Shere, Surrey.

Sporidia (·0075 in.) ·02 m.m. long.

This is referred doubtfully by Auerswald (*Gonn. & Rabh. v. p.* 4) to *Sphærella sparsa*, Wallr.

2756. Sphærella carpinea. *Fr.* “Hornbeam Sphærella.”

Hypophyllous. Perithecia gregarious, innate, at first covered, black, commonly scattered over the entire leaf; asci subclavate; sporidia biseriate, broadly and shortly cymbiform, the least curved side being a little hollowed out towards either apex.—*Cooke Seem. Journ. t.* 50, *f.* 19. *Gonn. & Rabh. pt. v. t.* 2, *f.* 16. *Rabh. exs. no.* 365. *West. exs.* 275. *Sphæria carpinea, Fr. Sys. Myc. ii. p.* 523. *Desm. Pl. Crypt. no.* 981. *B. & Br. Ann. N.H. no.* 655, *t.* 12, *f.* 41. *Cooke exs. no.* 165. *Cooke L.F. no.* 86. *Ascospora carpinea, Fr. Summ.* 425. *Rabh. exs.* 365. *Fckl. exs. no.* 466.

On dead leaves of hornbeam.

Sporidia (·0005 in.) ·015 m.m. long.

2757. Sphærella pinastri. *Duby.* “Fir-leaf Sphærella.”

Perithecia minute, scattered, globose, depressed, immersed, piercing the epidermis with their short ostiola; asci clavate; sporidia crowded, colourless, elliptical, often acuminate.—*Cooke Seem. Journ. t.* 50, *f.* 27. *Sphæria pinastri, Duby, Bot. Gall. ii. p.* 704. *Grev. t.* 13. *Eng. Fl. v. p.* 270. *Curr. Linn. Trans. xxii. p.* 324, *t.* 58, *f.* 82.

On fallen fir leaves.

Sporidia (·0003-·0004 in.) ·0075-·01 m.m. long.

2758. Sphærella inæqualis. *Cooke.* “Unequal Sphærella.”

Hypophyllous. Perithecia scattered, innate, globose, black, surmounted by three or four stiff hairs or setæ which pierce

through the epidermis; asci ventricose, attenuated upwards; sporidia biseriate or crowded, uniseptate, the upper cell subglobose, the lower cell twice the length of the upper, slightly yellowish.—*Cooke Seem. Journ.* (1866) *t.* 50, *f.* 26. *Cooke exs. no.* 173. *Cooke. L.F. no.* 85. *Sphærella cinerascens*, *Fleisch. Rabh. exs. no.* 45 (not *S. cinerascens*, *Fckl. exs. no.* 824).

On dead leaves of *Pyrus aria*, ash, hawthorn, pear, apple, &c. Common.

Sporidia (·0005 in.) ·013 m.m. long.

2759. Sphærella vaccinii. *Cooke.* "Bilberry Sphærella."

Perithecia minute, innate, black, shining, numerous, crowded together on the under surface in definite cinereous patches, determined by the veins of the leaves; asci subfusiform; sporidia elongated, narrow, uniseptate, hyaline.—*Cooke Seem. Journ.* (1866) *t.* 49, *f.* 11. *Sphærella myrtilli*, *Awd. Gonn. & Rabh. v. t.* 4, *f.* 46. *Cooke exs. no.* 176.

On semi-putrid leaves of *Vaccinium myrtillus*. Shere, Surrey.

Often on the same leaves as *Venturia myrtilli*. Asci ·04 m.m. long. Sporidia (·0007 in.) ·018 m.m. long.

2760. Sphærella ligustri. *Rob.* "Privet Sphærella."

Epiphyllous, rarely hypophyllous. Perithecia very minute, numerous, densely scattered, black, subglobose, then collapsing and umbilicate; asci clavate; sporidia oblong, with three or four sporules.—*Cooke Seem. Journ. t.* 50, *f.* 22. *Sphæria ligustri*, *Rob. Desm. exs. ed. 1, no.* 1296, *ed. 2, no.* 796. *Ann. S.N.* (1843) *xix.* p. 361. *Fckl. exs. no.* 835. *Gonn. & Rabh. v. t.* 7, *f.* 97.

On dead privet leaves.

Asci ·04 m.m. long. Sporidia (·0003 in.) ·01 m.m. long.

2761. Sphærella eryngii. *Fr.* "Sea Holly Sphærella."

Amphigenous. Perithecia innate, very small, globose, black, crowded together in brownish spots; asci large, cylindrical, flexuose; sporidia biseriate, uniseptate, constricted at the septum, attenuated towards each extremity, colourless.—*Cooke Seem. Journ. t.* 50, *f.* 21. *Fckl. exs. no.* 860. *Sphæria eryngii*, *Fr. Duby Bot. ii. p.* 710. *Desm. exs. no.* 1300. *B. & Br. Ann. N.H. no.* 657.

On dead leaves of *Eryngium*.

Sporidia (·0003 in.) ·02 m.m. long.

Fuckel refers as spermogonia to this species *Asteroma reticulata*, Chev.

- 2762. Sphærella rusci.** *De Not.* "Butcher's Broom Sphærella."

Perithecia very numerous, scattered, punctiform, glaucous or bluish-black, rendering the leaf pale, at first covered with the epidermis; asci linear-clavate; sporidia biseriate, oblong, obtuse, 4-5 septate, constricted at the septa, yellowish.—*De Not. Schema* p. 63. *Erb. Critt. Ital.* no. 886. *Sferiacei Italici* pl. 95. *Sphæria Rusci*, Wallr. *Fl. Germ.* p. 776. *B. & Br. Ann. N.H.* no. 639*. *Fckl. exs.* no. 838. *Berk. exs.* no. 86. *Curr. Linn. Trans.* xxii. pl. lix. f. 120. *Sphæria atrovirens*, δ . *Rusci*, *Eng. Fl.* v. p. 272. *Desm. exs.* no. 1281. *Cryptosphæria glauco-punctata*, *Grev. Fl. Ed.* p. 362. *Sphæria glauco-punctata*, *Curr. Linn. Trans.* xxii. pl. lix. fig. 144. *Cooke Seem. Journ.* (1866) t. 50, f. 20. *Cooke exs.* no. 166.

On dead *Ruscus aculeatus*. Common.

Sporidia (·0006-·0010 in.) ·015-·025 m.m. long.

- 2763. Sphærella isariphora.** *De Not.* "Stellaria Sphærella."

CONIDIA.—Tufts lax, on pallid spots, at length black; stem erect; conidia apical, ovate.—*Stysanus pusillus*, *Fckl. exs.* no. 174. *Sym. Myc. t. i. f.* 29.

SPERMOGONIA= *Septoria stellaris*, *West*.

Epiphyllous; perithecia very small, globose, depressed, scattered, black, often concealed beneath the epidermis; ostiola poriform; asci elongated, containing the oval or oblong sporidia, which are almost colourless, uniseriate, and uniseptate.—*Schema di Class. Sfer. Ital.* p. 63. *Cooke Seem. Journ.* 1866, t. 45, f. 11. *Cooke exs.* no. 167. *Sphæria isariphora*, *Desm. Mem. Soc. Roy. de Lille*, 1843; *exs.* no. 1291; *West. Bull. de Brux.* 1850, no. 27.

On dead leaves of *Stellaria holostea*. Common.

M. Desmazieres observes that this species often supports a minute parasitic *Isaria*, whence its name. I have never been able to find such a parasite, although I have sought for it diligently. M. Westendorp makes a similar observation of want of success in verifying the fact.

- 2764. Sphærella Leightonii.** *Berk.* "Leighton's Sphærella."

Epiphyllous; perithecia subglobose, pitch-brown; ostiola conical; asci clavate; sporidia oblong, cymbiform, triseptate.—*Cooke Seem. Journ.* 1866, t. 50, f. 25. *Sphæria Leightonii*, *B. & Br. Ann. N.H.* no. 659, t. xii. fig. 43.

On dead leaves of *Linnæa borealis*. Glen Dole, Clova.

Minute, scattered over the upper surface of the leaves, pitchy brown, shining, narrowed into a short conical ostium. Asci clavate, sublanceolate. Sporidia oblong-cymbiform, about four times as long as broad, obtuse, scarcely curved. Endochrome at first retracted to either end; a septum is then formed between the two masses, which are at length again divided.

2765. Sphærella pteridis. *Desm.* "Bracken Sphærella."

Epiphyllous; spots greyish or none; perithecia minute, globose, scattered or aggregate, covered with the epidermis; asci clavate; sporidia elongated-fusiform, straight or curved, uniseptate, hyaline.—*Cooke Seem. Journ. t. 50, f. 32. Cooke exs. no. 175. Sphæria pteridis, Desm. exs. no. 1295 (not Schm. exs. no. 2, which is Dothidea). B. & Br. Ann. N.H. no. 656. Sphæria litura, Berk. MSS. Sphæria punctiformis, b. Pteridis, Fries exs. no. 86 (not Sphærella pteridis, De Not. Sfer. Ital. tab. 99).*

On dead fronds of *Pteris aquilina*.

Sporidia (·0005 in.) ·015 m.m. long.

2766. Sphærella erysiphina. *Berk.* "Hop-leaf Sphærella."

Epiphyllous; perithecia scattered, minute, almost superficial, brown; asci cylindrical; sporidia uniseriate, hyaline, uniseptate. *Cooke Seem. Journ. t. 50, f. 24. Sphæria erysiphina, B. & Br. Journ. Hort. Soc. ix. p. 67.*

On living hop leaves.

Accompanying and mixed with *Sphærotheca Castagnei*.

Sporidia (·0005 in.) ·0125 m.m. long.

2767. Sphærella microspila. *B. & Br.* "Willow herb Sphærella."

Perithecia scattered, globose, one or more immersed in a minute brown spot arising from the delicate mycelium; asci cylindrical; sporidia oblongo-elliptic, uniseptate.—*Cooke Seem. Journ. t. 50, f. 23. Sphæria microspila, B. & Br. Ann. N.H. no. 984, t. 17, f. 36.*

On leaves of *Epilobium montanum*. Orton Wood.

Sporidia (·0002-·0005 in.) ·005-·0127 m.m. long.

2768. Sphærella brassicæcola. *De Not.* "Cabbage Sphærella."

SPERMOGONIA.—Perithecia circinating, crowded, in suborbicular pallid spots; spermatia hyaline, minute.—*Asteroma brassicæ, Chev. Fl. Par. 1, p. 449. Berk. Ann. N.H. no. 204.*

ASCOPHORE.—Epiphyllous; spots orbicular, large, pallid or cinereous, brownish in the centre; perithecia crowded, circinating, minute, subrotund, black; asci cylindrical; sporidia elongated, cylindrical, obtuse at the extremities, hyaline.—*De Not. Schema*, p. 64. *Cooke Seem. Journ.* 1866, t. 50, f. 17. *Sphæria brassicæ*, B. & Br. *Ann. N.H.* no. 656*, t. xii. f. 42. *Sphæria brassicæcola*, Duby, *Bot. Gall.* ii. p. 712.

On cabbage leaves. Autumn and Spring. Common.

Nothing can be more common than this on cabbage leaves in autumn and spring, but it is not often found with perfect fruit.—B. & Br.

2769. Sphærella rumicis. *Desm.* “Dock Sphærella.”

Spots amphigenous, minute, numerous, orbicular, scattered, brown; perithecia epiphyllous, conglomerate, somewhat innate, very small, globoso-depressed, becoming concave, olivaceous, then black, pierced with a simple pore; asci large, cylindrical, slightly curved; sporidia ovate-oblong, obtuse, uniseptate.—*Cooke Seem. Journ.* 1866, t. 50, f. 28. *Cooke. exs.* no. 168. *Gonn. & Rabh.* v. t. 4, f. 53. *Sphæria rumicis*, *Desm. exs.* no. 1298. B. & Br. *Ann. N.H.* no. 658. *Sphæria lichenoides*, *Johnst. Fl. Berw.* ii. p. 131.

On living dock leaves. Common.

Sporidia (‘0006 in.) ‘015 m.m. long.

2770. Sphærella allicina. *Awd.* “Onion Sphærella.”

Perithecia amphigenous, black, covered by the grey epidermis, densely gregarious or confluent; sporidia biseriate, oblong, rounded at each end, straight, uniseptate, hyaline, not constricted.—*Awd. in Gonn. & Rabh.* v. p. 19, t. 5, f. 69. *Sphæria allicina*, *Fr. S.M.* ii. p. 437. *Rabh. F.E.* no. 639.

On *Allium*. Shere (E.C.).

2771. Sphærella anarithma. B. & Br. “Scattered Grass Sphærella.”

Scattered, minute; perithecia globose, penetrating the cuticle by the small papillæform ostiolum; asci clavate; sporidia biseriate, sublanceolate, strongly constricted in the centre, uniseptate.—*Cooke Seem. Journ.* t. 50, f. 29. *Sphæria anarithma*, B. & Br. *Ann. N.H.* no. 893, t. 11, f. 37.

On *Aira cæspitosa*. Oct.—March. Batheaston.

Sporidia (‘0012 in.) ‘03 m.m. long.

2772. Sphærella recutita. Fr. "Linear Grass Sphærella."

CONIDIA.—Flocci fasciculate, short, simple, septate, yellow, forming little tufts on bleached spots; conidia oblong, didymous, yellowish.—*Scolicotrichum graminis*, Fckl. exs. no. 130.

SPERMOGONIA.—Perithecia innate, minute, black, numerous, aggregated, pierced, disposed in parallel lines between the veins; spermatia linear, straight, or flexuous.—*Septoria graminum*, Desm. Ann. Sc. Nat. xix. (1843), p. 339.

ASCOPHORE.—Hypophyllous. Perithecia aggregate, innate, slightly prominent, very minute, black, forming long parallel striæ; asci clavate; sporidia uniseptate, hyaline.—*Cooke Seem. Journ.* (partly). Fckl. exs. no. 820. *Sphæria recutita*, Fr. S.M. ii. p. 524. Berk. Eng. Fl. v. p. 278.

On grasses.

"The perithecia grow in rows, but are quite distinct."—M.J.B. The figure and description of fruit given in Seem. Journ. Bot. (1866), t. 50, f. 30, taken from a specimen published in Rabenhorst's Fungi Europæi exs. no. 740, do not belong to this species, but to *S. culmicola*, Fr.

2773. Sphærella lineolata. De Not. "Lineolate Sphærella."

Amphigenous, erumpent, with a brownish stroma; perithecia very small, disposed in lines; asci clavate; sporidia oblong, with from three to five sporules or nuclei.—*De Not. Schema* p. 63. *Cooke Seem. Journ.* (1866). t. 50, f. 31. *Gonn. & Rabh.* v. t. 8, f. 113. *Sphæria lineolata*, Roberge, Desm. exs. no. 1263. B. & Br. Ann. N.H. no. 616.

On *Ammophila arundinacea*. Sands of Barrie.

Sporidia 0.125 m.m. long (at length uniseptate).

2774. Sphærella hederæ. Sow. "Ivy Sphærella."

PYCNIDIA.—Scattered; perithecia innate, rather prominent, convex, even, black, ostiolum white; stylospores ovate, pellucid.—*Sphæropsis leucostigma*, Lev. Ann. Sc. Nat. (1846), p. 296. B. & Br. Ann. N.H. no. 420. *Sphæropsis hederæ*, Curr. Linn. Trans. xxii. p. 332.

ASCOPHORE.—Scattered; perithecia, together with the innate epidermis, rather prominent, convex, even, black; ostiolum pierced, white; sporidia lanceolate, triseptate, constricted, nucleate.—*Sphæria hederæ*, Sow. t. 371, f. 5. Eng. Fl. v. p. 278.

On dead ivy leaves. Shere. (Dr. Capron.)

2775. Sphærella buxi. D.C. "Box-leaf Sphærella."

PYCNIDIA.—Scattered in quincunxes, greyish-black; perithecia globose, slightly prominent; disc covered, depressed, white, at length erumpent, naked; stylospores oblong, twice as long as broad.—*Sphæropsis Candollii*, B. & Br. Ann. N.H. no. 423. Berk. exs. no. 180.

ASCOPHORE.—Perithecia light yellow, rather longer than broad, with a small mammillate ostiolum; sporidia uniseriate, colourless, acuminate, elliptical.—*Sphæria buxi*, D.C. Fl. Fr. vi. p. 146. Rabh. F.E. no. 940. Rabh. exs. no. 531. Curr. Linn. Trans. xxii. p. 283, t. 49, f. 186. *S. atrovirens*, var. *Buxi*, Eng. Fl. v. p. 272.

On dead box leaves. Milton.

Sporidia probably at length uniseptate ('0005 in.) '025 m.m.

2776. Sphærella ostruthii. Fr. "Angelica Sphærella."

Hypophyllous, aggregated; perithecia globose, small, black, emerging from a determinate grey crust.—Fr. Obs. i. p. 174. Berk. Ann. N.H. no. 102. Berk. exs. 330. Schm. exs. no. 205. *Ascospora ostruthii*, Fr. S.V.S. 426.

On leaves of *Angelica sylvestris*. Sept.

2777. Sphærella brunneola. Fr. "Brown Sphærella."

Gregarious; perithecia globose, very minute, mouthless, black, emerging from a determinate brown, oblong spot, which at length becomes black; sporidia?—Fr. S.M. ii. p. 526. Eng. Fl. v. p. 279. Fries. exs. no. 248. Berk. exs. no. 39. *Ascospora brunneola*, Fr. S.V.S. p. 425. Fckl. exs. no. 467.

On dead leaves of *Convallaria majalis*.

The fruit of this species seems to be unknown as well as that of the last-named.

Gen. 358.**VENTURIA, De Not.**

Fig. 398.

Perithecia fragile, hispid or setulose at the apex; ostiolum large; paraphyses none; sporidia one or two celled, colourless, or slightly coloured.—De Not. in Att. vi. riun. scienz. p. 485. Fr. S.V.S. p. 405. Cooke B.F. 2nd ed. p. 159.

(Fig. 398.)

* *Epiphyllous*.**2778. Venturia Dickiei.** *De Not.* "Dickie's Venturia."

Perithecia aggregate, erumpent, subglobose; ostiola obtuse, papillæform, beset with rather long, rigid setæ, seated on an interwoven filamentous stratum; asci short, subcylindrical; sporidia uniseptate, quadrinucleate.—*Sphæria Dickiei*, *B. & Br. Ann. N.H. no. 617, pl. x. f. 8. Lasiobotrys Linnææ, Dickie, MSS. Berk. Outl. p. 404. Venturia Dickiei, De Not. Schema. p. 51. Cooke Seem. Journ. 1866, t. 49, f. 1.*

On leaves of *Linnæa borealis*.

Forming orbicular sori beneath the true cuticle about a line broad. Perithecia at length exposed, subglobose, with an obtuse papillæform ostiolum, beset with stiff dark bristles, as long or longer than themselves, springing from a radiating, more or less interwoven stratum, of very obscurely septate brownish threads, amongst which are a few darker and closely articulate. Asci short, subcylindrical, obtuse. Sporidia oblong, short, containing about four nuclei or four regular endochromes, or more properly uniseptate, with two endochromes in each division.

2779. Venturia chætomium. *De Not.* "Small Sedge Venturia."

Hypophyllous, rarely epiphyllous; perithecia very minute, superficial, scattered or gregarious, subglobose, collapsed when dry, black, covered with rigid divergent hairs; ostiolum papillate; asci nearly spindle-shaped; sporidia oblong, straight or slightly curved, containing four sporules or nuclei.—*Sphæria chætomium*, *Corda. ii. t. 13. f. 102. B. & Br. Ann. N.H. no. 620, t. 9, f. 3. Chætomium pusillum, Fries. exs. no. 272. Sphæria exosporioides, Desm. exs. no. 126. Venturia chætomium, De Not. Schema, p. 51. Cooke Seem. Journ. 1866, t. 49, f. 3.*

On dead leaves of *Carex pendula*.

Sporidia (·00027 in.) ·007 m.m. long.

2780. Venturia eres. *De Not.* "Long-haired Venturia."

Scattered, superficial; perithecia globose, beset with long, rigid articulated bristles; asci short, clavate; sporidia oblong, uniseptate.—*Sphæria eres*, *B. & Br. Ann. N.H. no. 621, pl. ix. fig. 4. Venturia eres, De Not. Schema, p. 51. Cooke. Seem. Journ. 1866, t. 49, f. 2.*

On dead leaves of *Carices*.

Scattered over the leaves and quite superficial, attached by a few hyaline creeping threads. Perithecia globose, beset with very long radiating, rigid, somewhat pellucid, articulated bristles, which are black to the naked eye, but purplish-brown under the microscope; when young their apices are often swollen. Asci rather short, clavate. Sporidia biseriate, oblong-elliptic, about four times as long as broad.

The perithecia are much larger than in *V. chaetomium*, the hairs are longer, pellucid, and not opaque; asci clavate, and not fusiform, and the uniseptate sporidia are shorter.

2781. *Venturia myrtilli.* Cooke. "Bilberry Venturia."

Scattered over either surface; perithecia globose, black, covered with long rigid hairs; asci ventricose, attenuated upwards; sporidia biseriate or crowded, uniseptate, obtuse above, attenuated below, hyaline.—*Cooke Seem. Journ.* 1866, t. 49, f. 4. *Cooke exs. no.* 164. *Cooke L.F. no.* 82.

On semi-putrid leaves of *Vaccinium myrtillus*. Shere, Surrey.
Sporidia (·0004 in.) ·01 m.m. long.

2782. *Venturia ilicifolia.* Cooke. "Holly-leaf Venturia."

Scattered over the upper surface (perhaps also on both surfaces) superficial; perithecia minute, subglobose, black, clad with long, rigid, divergent hairs; asci subfusiform, minute; sporidia biseriate, narrowly elliptic or lanceolate, uniseptate, scarcely constricted.—*Cooke Seem. Journ.* 1866, t. 49, f. 5.

On semi-putrid leaves of holly and sawow. Shere, Surrey.

Asci (·0003 in.) ·02 m.m. long. Sporidia (·0003 in.) ·008 m.m. long. The species on sawow (*Salix caprea*) is not specifically distinct, as far as can be judged from a single specimen. (Fig. 398.)

2783. *Venturia integra.* Cooke. "Entire spored Venturia."

Perithecia scattered, superficial, small, delicate, dark brown, covered with long flexuous hairs; asci narrowly clavate; sporidia biseriate, elliptic, entire, endochrome minutely granular, nearly colourless.

On leaves of *Corylus avellana*. Shere. (Dr. Capron.)

Sporidia ·000-·0004 in.

**** Corticolous.**

2784. *Venturia barbula.* B. & Br. "Pine Bark Venturia."

Cæspitose; perithecia globose, collapsed, slightly pilose; sporidia oblong, uniseptate.—*Sphæria barbula*, B. & Br. *Ann. N.H.* no. 870, t. 10, f. 20.

On bark of pine. March. Wraxall.

Forming little tufts; perithecia globose, collapsed when dry, astomous, clothed with a few short scattered hairs; sporidia oblong, or subelliptic (.0005 in.) uniseptate. Allied closely to *S. chaetomium*.—*B. & Br.*

Gen. 359.

PYRENOPHORA, Fr.

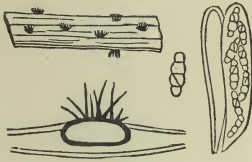


Fig. 399.

Nucleus slowly formed, immersed in a sclerotoid mass, which performs the office of a perithecium; ostiolum at length slightly prominent; sporidia multiseptate.—*Fr. Berk. Outl. p.* 402. (*Fig.* 399.)

2785. *Pyrenophora phæocomes*. Fr. “Bristly *Pyrenophora*.”

Scattered, jet black; perithecia globoso-hemispherical, almost mouthless, beset with erecto-divergent hairs; asci cylindrical; sporidia oblong, obtuse, at first triseptate, constricted, at length muriform, yellowish.—*Fr. S.V.S. p.* 398. *Fckl. Sym. Myc. p.* 215, *t.* 6, *f.* 41. *Fckl. exs. no.* 798. *Sph. phæocomes, Reb. Neom. t.* 1, *f.* 4. *Fr. S.M. ii. p.* 515. *Eng. Fl. v. p.* 276. *Ann. N.H. no.* 207, *t.* 11, *f.* 8. *S. capillata, Grev. t.* 69.

On dead leaves of grasses.

(*Fig.* 399.)

Gen. 360.

CERATOSTOMA, Fr.

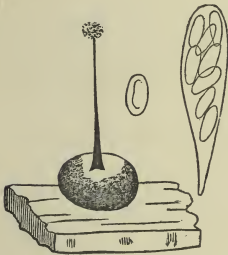


Fig. 400.

Perithecia soft, membranaceous; ostiolum subulate, rostrate; asci soon disappearing; sporidia oozing out and forming a mass at the ostiolum.—*Berk. Outl. p.* 402. (*Fig.* 400.)

2786. *Ceratostoma caprinum*.

Fr. “Woolly *Ceratostoma*.”

Perithecia superficial, globose, villous, white; ostiola very long, subulate, black; asci clavate; sporidia simple, oozing out when mature and forming a globose mass at the ostiolum.—*Fr. S.V.S. p.* 396. *Sphæria caprina, Fl. Dan. t.* 1859, *f.* 2. Amongst rubbish.

(*Fig.* 400.)

2787. Ceratostoma Zobelii. Berk. "Truffle *Ceratostoma*."

Perithecia very minute, punctiform, globose; asci broad, sessile; sporidia ovate-lanceolate or elliptic, unequal-sided, simple, brown, opaque.—*Berk. Outl. p. 402. Microthecium Zobelii, Corda. Ic. v. f. 53. Bot. Zeit. 1861. Fckl exs. no. 809. Ceratostoma brevirostre, Fckl. Sph. Zobelii. Tul. Fung. Hyp. p. 186. Melanospora Zobelii, Fckl. Sym. Myc. p. 127.*

On truffles.

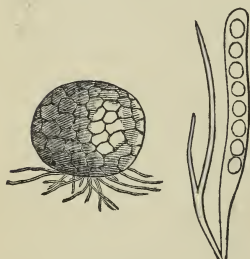
Gen. 361.**ORBICULA, Cooke.**

Fig. 401.

Perithecia between membranaceous and carbonaceous, reticulated, seated on a distinct mycelium; ostiolum obsolete; asci cylindrical; sporidia subglobose, hyaline or coloured; paraphyses simple or branched.

(Fig. 401.)

2788. Orbicula cyclospora.

Cooke. "Paper Orbicula."

Mycelium radiating, branched, colourless; perithecia globose, dark-brown, reticulated; asci cylindrical; paraphyses branched; sporidia globose, hyaline.—*Sphæria cyclospora, Cooke in Pop. Sci. Rev. Jan. 1871, t. 35, f. 10, 11.*

On varnished wall paper.

This species was accompanied by *Rhinotrichum lanosum*, *Penicillium chartarum*, and *Sporidesmium alternaria*, all of which may be connected therewith as conidia and stylospores. (See Popular Science Review quoted above.) There appears to be no decided mouth to the perithecia, so that it is not a true *Sphæria*. (Fig. 401.)

2789. Orbicula tartaricola. Cooke. "Lichen Orbicula."

Mycelium superficial, dark-brown, radiating, very much branched and articulated, the joints oblong and nucleate; perithecia oblong-conical, black, growing in the interstices of the matrix; asci linear; sporidia simple, spherical or oblong, at first colourless, at length brown, and minutely nucleate.—*Sphæria tartaricola, Leight. Ann. N.H. xix. p. 408. Linn. Trans. xxvii. p. 159, t. 35, lower figs.*

On thallus of *Lecanora tartarea*. Near Dolgelly.

This parasite was growing on the interstices of the areolæ of the thallus of the lichen, and never on the surface. The only specimen observed was collected, and is deposited in the Kew Herbarium. No mention whatever is made by the Rev. W. Leighton of any ostiolum, nor is there any indication in the figures. In this respect, as well as in the reticulated substance of the perithecia, distinct mycelium, and spherical spores it accords with the preceding species, both of which seem to offer good features for a distinct genus, the absence of ostiolum being sufficient reason to exclude them from the genus *Sphaeria*.

Gen. 362.

MICROTHYRIUM, Desm.



Fig. 402.

Perithecia simple, superficial, membranaceous, adpressed, scutiform, perforated in the centre; asci fixed, subclavate. — *Desm. Ann. Sc. Nat.* xv. (1841), p. 137.

(Fig. 402.)

2790. *Microthyrium microscopicum*. *Desm.* "Microscopic Microthyrium."

Epiphyllous; spots large, irregular, greyish; perithecia scattered, minute, flattened, black, somewhat shining, papillate; asci clavate; sporidia nearly fusiform, uniseptate, at length tri-septate, hyaline. — *Desm. Ann. Sc. Nat.* (1841), xv. p. 138, t. 14, f. 1. *Desm. exs. no.* 1092. *Fckl. exs. no.* 190. *Cooke exs. no.* 282. *Cooke, L.F. no.* 91.

On leaves of box, evergreen oak, &c.

Fuckel, in his *Symbolæ Mycologicæ* (p. 98, t. iii. f. 11, a. b. c.) makes a distinct species of the form found on oak leaves, but, it appears to us, without sufficient reason.

(Fig. 402.)

Gen. 363.

STIGMATEA, Fr.

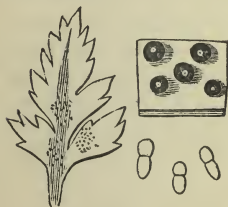


Fig. 403.

Parasitic; perithecia globose, black, innate, slightly prominent; nucleus firm, at first mouthless, then with a roundish aperture. — *Tul. Carp. ii.* p. 286.

(Fig. 403.)

2791. Stigmatæa conferta. *Fr.* "Crowded Stigmatæa."

Innate, hypophyllous, irregular, black; perithecia rather prominent, globose, confluent in the centre.—*Fr. S.V.S. p. 421. Sph. conferta, Fr. S.M. ii. p. 435. Berk. Ann. N.H. no. 177.*

On leaves of *Vaccinium uliginosum*. Glencoe.

Perithecia rather prominent, minute, aggregated, opaque, astomous, contents white.

2792. Stigmatæa geranii. *Fr.* "Geranium Stigmatæa."

CONIDIA.—Ovate, oblong, or subcylindrical, straight, at length quadrilocular.—*Fusidium geranii, West. Act. Belg. (1851), p. 413.*

ASCOPHORE.—Hypophyllous; perithecia minute, slightly prominent, mouthless, somewhat connate, and forming a spot-like orbicular tuft; sporidia ovate-oblong, at length uniseptate, pallid.—*Tul. Carp. ii. p. 290. Fckl. exs. no. 420. Dothidea geranii, Fr. S.M. ii. p. 558. Eng. Fl. v. p. 287. Xyloma geranii, Grev. Fl. Ed. p. 368.*

On leaves of *Geranium sylvaticum*. Scotland.

Forming black spots 1-2 lines broad, dotted with the slightly prominent perithecia, which are white within.—*Fries.*

2793. Stigmatæa ranunculi. *Fr.* "Crowfoot Stigmatæa."

Hypophyllous; spots indeterminate, uniform, black; perithecia subgregarious, depressed, unequal.—*Fr. S.V.S. p. 421. Dothidia ranunculi, Fr. S.M. ii. p. 562. Eng. Fl. v. p. 287.*

On leaves of *Ranunculi*. Berwick.

2794. Stigmatæa Robertiani. *Fr.* "Herb Robert Stigmatæa."

Epiphyllous, scattered, hemispherical, even, shining, black, white within; asci oblong; sporidia biseriate, oblong, uniseptate, yellowish.—*Cooke L.F. no. 80. Fr. S.V.S. p. 421. Cooke exs. no. 283. Fckl. exs. no. 419. Dothidea Robertiani, Fr. S.M. ii. p. 288. Eng. Fl. v. p. 288. Grev. t. 146, f. 1. Baxt. exs. no. 78. Cryptosphaeria nitida, Grev. Fl. Ed. p. 363.*

On green leaves of *Geranium Robertianum*. Common.

(Fig. 403.)

2795. Stigmatea potentillæ. *Fr.* "Potentilla Stigmatea."

SPERMOGONIA.—Perithecia hemispherical; spermatia bilocular, curved, caudate, hyaline.—*Septoria potentillarum*, *Fckl. Sym. Myc. t. 2, f. 50. Fckl. exs. no. 502.*

ASCOPHORE.—Epiphyllous, seriato-confluent, following the direction of the nerves, slightly hairy, opaque, black; asci oblong, curved; sporidia elongated, ovate, uniseptate.—*Fr. S.V. S. p. 422. Fckl. exs. no. 423. Cooke exs. no. 174. Dothidea potentillæ, Fr. S.M. ii. p. 563. Eng. Fl. v. p. 288. Sphæria potentillæ, Sow. t. 370, f. 2.*

On living leaves of *Potentillæ*.

2796. Stigmatea alchemillæ. *Grev.* "Alchemilla Stigmatea."

Epiphyllous, black, seated on a pallid spot; perithecia slightly prominent, connate, disposed in rows, which radiate from a common centre; asci oblong; sporidia elongated-ovate, simple, hyaline.—*Fr. S.V.S. p. 423. Fckl. exs. no. 425. Dothidea alchemillæ, Eng. Fl. v. p. 288. Asteroma alchemillæ, Fr. El. ii. p. 152. Grev. Fl. Ed. p. 369.*

On living leaves of *Alchemilla*. Scotland.

When mature consisting of black, minute, raised points, or very short lines clustered on pale circular spots on the leaf. The points are irregularly arranged, but they are most closely set in the centre, and assume altogether an obscure star-like form.—*Johnst.*

2797. Stigmatea polygonorum. *Fr.* "Polygonum Stigmatea."

Amphigenous, sub-gregarious, minute, black, rather shining, collapsing, of the same colour within.—*Fr. S.V.S. p. 421. Dothidea polygoni, Fr. S.M. ii. p. 564.*

On leaves of *Polygonum*.

2798. Stigmatea chætomium. *Fr.* "Raspberry Stigmatea."

Epiphyllous, scattered, unequal, pilose, black, brownish within; sporidia ovate, uniseptate, yellowish.—*Fr. S.V.S. p. 422. Fckl. exs. no. 424. Dothidea chætomium, Fr. S.M. ii. p. 563. Berk. Ann. N.H. no. 200.*

On leaves of raspberry and *Rubus cæsius*.

Gen. 364.

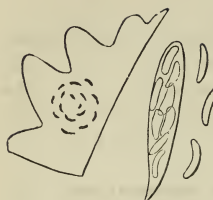
HYPOSPILA, Fr.

Fig. 404.

Perithecia globose, black, mouthless, innate, concealed by the blackened substance of the leaves, ultimately splitting across.—Fr. *S.V.S.* p. 421.

(Fig. 404.)

2799. Hypospila quercina. Fr. "Oak-leaf Hypospila."

SPERMOGONIA.—Spermatia minute, cylindrical, curved.

ASCOPHORE.—Minute, disposed in circles, penetrating the leaf, flattened, black, at length splitting all round; perithecia slightly prominent, convex, at length umbilicate; sporidia biserial, elliptical, colourless, curved.—Fr. *S.V.S.* p. 421. *Cooke exs.* no. 177. *Fckl. exs.* no. 417. *Cooke L.F.* no. 90. *Curr. Linn. Trans.* xxii. t. 49, f. 204. *Sph. bifrons*, Fr. *S.M.* ii. p. 438. *Eng. Fl.* v. p. 258. *S. circumvoluta*, Sow. t. 373, f. 4. *Xyloma* DC. *Mem. Mus.* ii. t. 3, f. 11. *Moug. exs.* no. 480.

On dry oak leaves.

Patches angular, not one line broad, their shape being dependant on the meshes of the veins, seated on a white spot; perithecia one or more, at length naked, from the upper portion of the patch breaking off.—*M.J.B.*

Sporidia ($\cdot 0005$ in.) $\cdot 0127$ m.m.

(Fig. 404.)

2800. Hypospila populina. Fr. "Poplar Hypospila."

SPERMOGONIA.—Spermatia minute, cylindrical, curved.

ASCOPHORE.—Innate, flat, angular, opaque, black, scattered upon a pale spot; perithecia latent, generally solitary; sporidia filiform, the length of the asci, colourless, multiseptate.—Fr. *S.V.S.* p. 421. *Fckl. exs.* no. 418. *Sph. ceuthocarpa*, Fr. *S.M.* ii. p. 439. *Eng. Fl.* v. p. 258. *Moug. exs.* no. 269. *Curr. Linn. Trans.* xxii. t. 49, f. 213.

On dry poplar leaves.

More scattered than *H. quercina*, rather larger, and not shining.

Gen. 365.

ISOHEA, Fr.

Fig. 405.

Nucleus without a perithecium, coloured, or black, covered by the transformed substance of the matrix, or immersed therein.—*Fr. S.V.S. p. 421. (Fig. 405.)*

2801. Isothea rhytismoides. Fr.
"Pitchy Isothea."

Cells globose, scattered, or crowded, covered by the polished, blackened, cuticle, contents salmon-coloured; ostiola very small, obsolete;

asci clavate; sporidia oblong, obtuse.—*Fr. S.V.S. p. 421. Sph. rhytismoides, Bab. Abst. Linn. Trans. p. 32. Berk. exs. no. 324. Berk. Ann. N.H. no. 178, t. 10, f. 9. Curr. Linn. Trans. xxii. t. 49, f. 209. Sphæria dryadis, Fckl. exs. 2161.*

On leaves of *Dryas*. Sept. Sutherlandshire.

Epiphyllous occupying the whole surface, or detached portions of the leaf; cells generally scattered, sometimes confluent in the former case, the epidermis between them is cinereous, but above them raised, jet-black and shining; mouth simple, very minute. Contents salmon-coloured, containing clavate asci, with linear paraphyses. Sporidia biseriata, oblong, obtuse, sometimes containing two sporidiola.

Sporidia ($\frac{1}{10000}$ in.) $\frac{1}{100}$ m.m.

(*Fig. 405.*)

2802. Isothea pustula. Berk. "Oak-leaf Isothea."

Unilocular, convex, even, reddish-brown, white within, contents black; asci clavate; sporidia oblong.—*Berk. Outl. p. 392. Phoma pustula, Fr. S.M. ii. p. 547. Fries. exs. no. 205. Berk. exs. no. 40. Eng. Fl. v. p. 284. Sph. pustula, Pers. Ann. 11, t. 2, f. 7, b. Pers. Syn. p. 91. Fckl. Sym. Myc. t. vi. f. 33.*

On fallen oak leaves. Common. [Mid. Carolina.]

2803. Isothea immunda. Cooke. "Small Oak Isothea."

Unilocular, sometimes plurilocular (one-third the size of those in *I. pustula*), black, plane, or a little convex; asci linear, curved; sporidia uniseriate, ovate, uniseptate, hyaline.—*Sphæria immunda, Fckl. exs. no. 843. Sym. Myc. p. 108, t. 3, f. 10 a, b.*

On the under surface of oak leaves. Shere, Surrey. Dec. 1865. (Dr. E. Capron.)

Closely allied to *I. pustula*, but smaller, and differing in fructification. At present I have only seen it upon two leaves.

2804. Isothea saligna. B. "Sallow Isothea."

Uni-multilocular, convex, brown-black, subumbonate in the centre; asci cylindrical; sporidia filiform, simple.—*Berk. Outl. p. 392. Berk. exs. no. 191. Phoma salignum, Fr. S.M. ii. p. 546. Fries exs. no. 283. Eng. Fl. v. p. 283. Sph. salicina, Sow. t. 372, f. 1. Moug. exs. no. 268. Linospora caprea, Fckl. Sym. Myc. p. 124. Fckl. exs. no. 879.*

On fallen sawow leaves. Winter and Spring.

Gen. 366.

DICHÆNA, Fr.

Perithecia subcarbonaceous, elliptic, closed, bursting by a longitudinal fissure; nucleus and asci diffuent.

(Fig. 406.)



Fig. 406.

2805. Dichæna strobilina. Fr. "Fir-cone Dichæna."

PYCNIDIA.—Perithecia gregarious, irregular; stylospores almond-shaped, hyaline; endochrome bipartite.—*Hendersonia strobilina, Curr. Linn. Trans. xxii. p. 329. Cooke. exs. no. 341.*

ASCOPHORE.—Gregarious, erumpent; perithecia rather irregular, rounded at first, soft, dirty-brown, then black, opening by a longitudinal fissure; sporidia fusiform, slightly curved, trisepate, sometimes each cell nucleate, hyaline.—*Fr. S.V.S. p. 403. Sph. strobilina, Fr. S.M. ii. p. 495. Fries. exs. no. 318. Eng. Fl. v. p. 271. Fckl. exs. no. 790.*

On fir cones.

The stylosporous condition is far more common than the ascigerous state, found by Dr. Capron at Shere. Sporidia (·0004-·0005 in.) ·01-·0127 m.m.
(Fig. 406.)

DICHÆNA RUGOSA, Fr. I think should be included with Lichens; Rabenhorst divides it into two species under the names of *Psilospora faginea* on beech, and *Psilospora quercus* on oak.

Gen. 367.

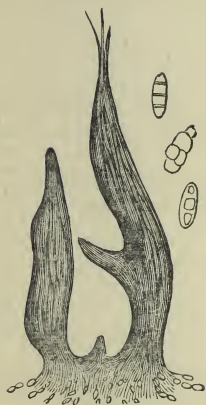
CAPNODIUM, Mont.

Fig. 407.

Parasitic. Mycelium creeping, black; perithecia elongated, often branched, composed of confluent threads, with the tips often free at the apex. (Fig. 407.)

* Peridia more or less branched.

2806. Capnodium elongatum.

B. & Desm. "Elongated
Capnodium."

Setose. Peridia elongated, acuminate, generally simple, orifice mostly fimbriated; sporidia 2-3 septate, articulations at length constricted, and divided longitudinally.—*Berk. & Desm. Journ. Hort. Soc.* iv. p. 251, f. 5. *Curtis N.A. exs.* no. 1634. *B. & Br. Ann. N.H.* no. 900.

On spurs of living pear trees. Cornwall. [S. Carolina.]

Forming a scattered setose black stratum; mycelium moniliform. Several species of this genus are found in the United States. (Fig. 407.)

** Peridia simple, subulate (*Microxiphium*, Harv.)

2807. Capnodium Footii. *Berk. & Desm.* "Subulate Capnodium."

Forming little suborbicular setulose patches; mycelium subgelatinous, hyaline, when old moniliform; peridia dark, setiform; outer coat hyaline, threads at first cylindrical, at length moniliform; asci and sporidia unknown.—*Journ. Hort. Soc.* iv. p. 254, f. 10. *Fumago fagi*, *Pers. M.E.* i. p. 10. *Microxiphium Footii*, *Harv. MSS.*

On leaves of evergreens, deciduous trees, as the beech, and on herbaceous plants, as *Mercurialis perennis*. Common.

Often accompanied on the leaves of evergreens by *Strigula Babingtonii*.

** Peridia subglobose.
*

2808. Capnodium sphæricum. *Cooke.* "Veronica Capnodium."

PYCNIDIA.—Seated on a mycelium of radiating, branched, black threads, hemispherical, minute, rupturing irregularly in laciniae; stylospores oblong, uniseptate, hyaline.—*Asteroma veronicae*, *Desm. Berk. exs. no.* 193.

ASCOPHORE.—Aggregated or scattered, subglobose, irregular, striate, small; mouth fringed; asci globose, containing eight uniseptate, coloured sporidia.—*Dothidea veronicae*, *Lib. exs. no.* 173.

On leaves of *Veronica*. Shere. (Dr. Capron.)

This is not a good *Capnodium*, but it certainly does not seem to be a *Dothidea*. Madame Libert describes the globose asci, which are absent in the *Asteroma* of Desmazieres. Asci are certainly present in the mature plant, as stylospores are in the early, or pycnidia, stage which corresponds to the *Asteroma*.

Gen. 368.

BLOXAMIA, B. & Br.

Peridium persistent below, very delicate above, evanescent, at length excipuliform; sporidia quadrate, generated in closely packed tubes.—*B. & Br. Ann. N.H.* 1854, *p.* 468.

This is a curious and anomalous genus, which it is difficult to place. On this account it had almost been forgotten, and, at the last moment, is inserted here.

2809. Bloxamia truncata. *B. & Br.* "Truncate Bloxamia."

Perithecia punctiform, often slightly elongated, depressed, with vertical sides, firmer below and persistent, extremely delicate, white and evanescent above. Hymenium consisting of closely packed tubes, which produce a row of sub-quadrate sporidia, .0001 in. wide .000125 in. long.—*B. & Br. Ann. N.H.* 1854, *t.* xvi. *f.* 17. *Cooke. exs. ined.*

On dead elm. Feb.—Mar. Batheaston.

ERRATA.

PAGE.

- 7 No. 4 add "*A. virosus*. Gonn. & Rabh. t. 9, f. 1. *A. solitarius*. Gonn. & Rabh. t. 11, f. 2."
- 7 No. 6 add "*A. citrinus*. Gonn. & Rabh. i. t. 4."
- 8 No. 7 add "*Gonn. & Rabh. i. t. 10, f. 2, var.*"
- 8 No. 8 the fig. "*Gonn. & Rabh. i. t. 8, f. 1,*" very doubtful.
- 9 No. 9 the fig. cited "*Gonn. & Rabh. i. t. 1,*" is *A. spissus*. no. 12.
- 9 No. 10 the fig. cited "*Gonn. & Rabh. i. t. 7, f. 3,*" is *A. spissus*. no. 12.
- 27 No. 58 dele "*Sow. t. 281.*"
- 57 No. 148 dele "*Sow. t. 206.*"
- 60 No. 157 for "*Sow. t. 206*" read "*Sow. t. 205.*"
- 78 No. 214 dele "*Sow. t. 210.*"
- 140 No. 395 for "*Sow. t. 261*" read "*Sow. t. 264.*"
- 144 No. 405 for "*Sow. t. 225*" read "*Sow. t. 285.*"
- 149 No. 419 for "*Sow. t. 240, f. 1-3*" read "*Sow. t. 248, f. 1-3.*"
- 194 No. 547 for "*Sow. t. 98*" read "*Sow. t. 56.*"
- 204 No. 578 dele "*Sow. t. 106.*"
- 212 No. 599 for "*Sow. t. 204*" read "*Sow. t. 104.*"
- 247 No. 696 to "*Sow. t. 182*" add "*lower figs.*"
- 264 No. 740 for "*Sow. t. 190*" read "*Sow. t. 290.*"
- 273 No. 771 add "*spores white.*"
- 275 No. 778 add "*spores white.*"
- 275 No. 778 for "*Sow. t. 182*" read "*Sow. t. 132.*"
- 278 No. 790 for "*Sow. t. 190*" read "*Sow. t. 196.*"
- 289 No. 831 dele "*Sow. t. 346.*"
- 329 No. 956 for "*Solenia candida,*" read "*Solenia fasciculata. Pers. Myc. Eur. t. 12, f. 8-9.*"—See *Ann. Nat. Hist.* for June, 1871, pp. 429, whence it appears that the specimens found by Mr. Broome were referred to *Solenia candida* in error. Other new species are described in the "*Annals*" quoted, but too late to be included in this work.

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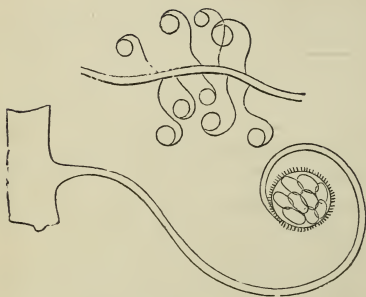
Gen. 271*.**HELICOSTYLUM**, Corda.

Fig. 408.

granules.—*Corda. Ic. v. p. 55.*

Hyphasma decumbent, branched, continuous. Stipes erect, spirally incurved, simple, continuous, then deciduous. Sporangia acrogenous, membranaceous, fixed to the stem, then deciduous, bursting irregularly. Sporidia irregularly conglobate, continuous; epispore simple; nucleus firm, with oleaginous (Fig. 408.)

1900a.

Helicostylum elegans. *Corda.* "Elegant Helicostylum."

Tufts minute, lax, white; hyphasma branched, here and there verrucose, white; stem short, white; sporangia globose, rough, yellowish-white; sporidia ovate, naviculæform, whitish.—*Corda. Ic. v. f. 28.*

On dead woodlice. Budleigh Salterton (Dr. Carter).

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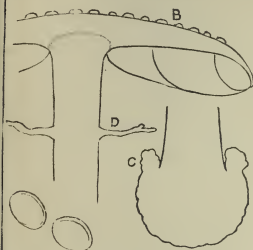
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<i>ilicifolia</i> . Cooke.	924	<i>hypoxylon</i> . Grev.	790
<i>integra</i> . Cooke.	924	<i>pedunculata</i> . Fr.	790
<i>myrtilli</i> . Cooke.	924	<i>polymorpha</i> . Grev.	789
Vermicularia . Tode.		<i>vaporaria</i> . B.	791
<i>atramentaria</i> . B. & Br.	438	XYLOGRAPHA .	
<i>circinans</i> . B.	439	<i>parallela</i> . Fckl.	736
<i>dematium</i> . Fr.	438	XYLOMA .	
<i>trichella</i> . Grev.	438	<i>concava</i> . Grev.	767
Verpa . Swartz.		<i>geranii</i> . Grev.	928
<i>conica</i> . Sow.	660	<i>quercina</i> . D.C.	930
<i>digitaliformis</i> . P.	659	<i>rubrum</i> . Pers.	803
Verticillium . Link.		Zasmidium . Fr.	
<i>agaricinum</i> . Corda.	777	<i>cellare</i> . Fr.	628
<i>apicale</i> . B. & Br.	598	Zygodesmus . Corda.	
<i>distans</i> . B. & Br.	959	<i>fuscus</i> . Corda.	611



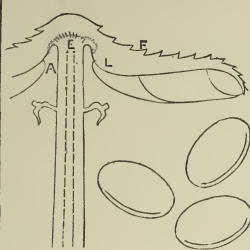
GEO. P. BACON, PRINTER, LEWES.

* Hymenophore distinct from the fleshy Stem.

1. **AMANTHA.**

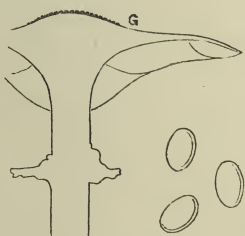


2. **LEPIOTA.**

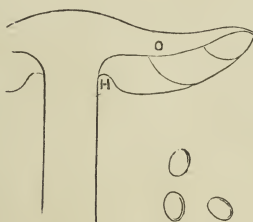


** Hymenophore confluent and homogeneous with the fleshy Stem.

3. **ARMILLARIA.**



4. **TRICHOLOMA.**



5. **CLITOCYBE.**

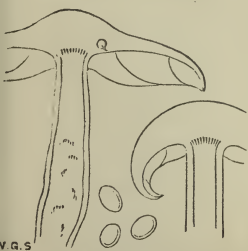


6. **PLEUROTUS.**

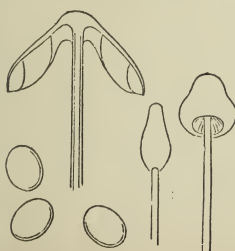


*** Hymenophore confluent with, but heterogeneous from the cartilaginous Stem.

7. **COLLYBIA.**



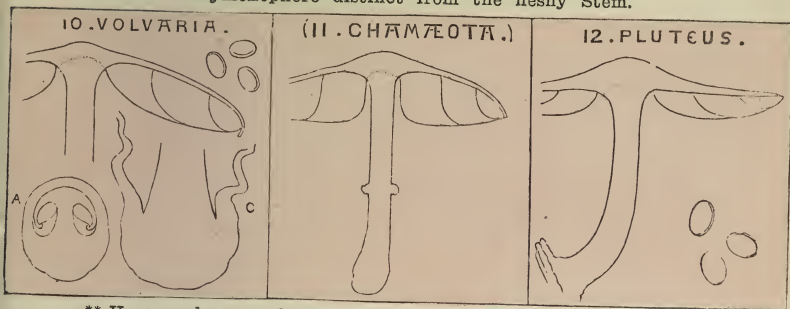
8. **MYCENA.**



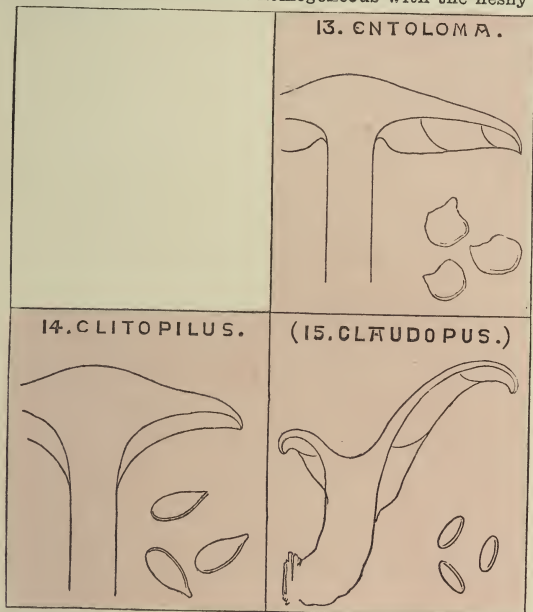
9. **OMPHALIA.**



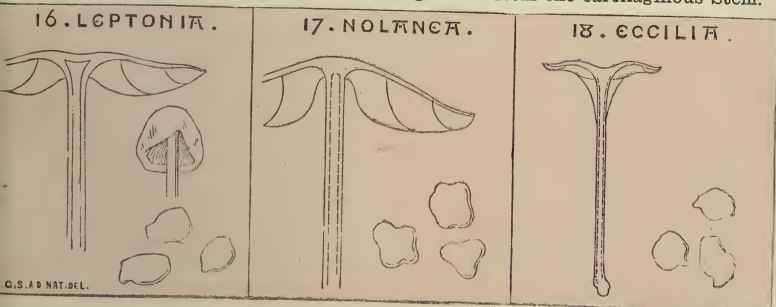
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** Hymenophore confluent and homogeneous with the fleshy Stem.



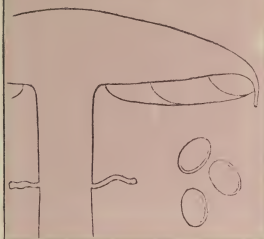
*** Hymenophore confluent with, but heterogeneous from the cartilaginous Stem.



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* Hymenophore distinct from the fleshy Stem.

26. **PSALLIOTA**.

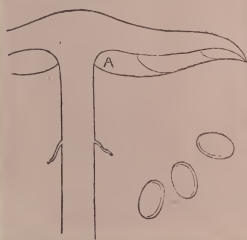


27. **PILOSACE**.

NOT BRITISH.

** Hymenophore confluent and homogeneous with the fleshy Stem.

28. **STROPHARIA**

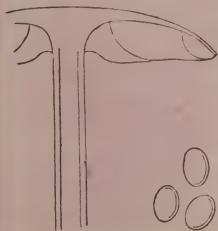


29. **HYPHOLOMA**.



*** Hymenophore confluent with, but heterogeneous from the cartilaginous Stem.

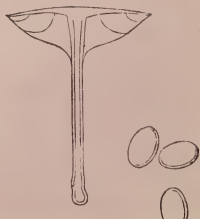
30. **PSILOCYBE**.



31. **PSATHYRA**.

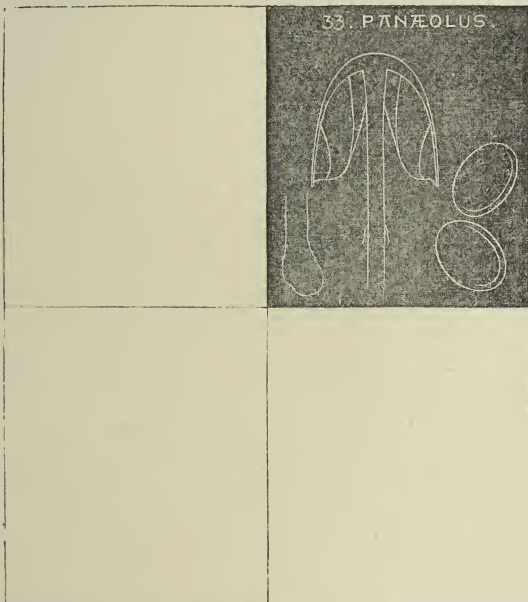


(32. **DECONICA**.)



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** Hymenophore confluent and homogenous with the fleshy Stem.



*** Hymenophore confluent with, but heterogeneous from the cartilaginous Stem.



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* Hymenophore distinct from the fleshy Stem.

I. LEUCOSPORI.	II. HYPORHODII.	III. DERMINI.	IV. PRATELLÆ.	V. COPRINARIÆ.
1. Amanita.	10. Volvaria.			
2. Lepiota.	11. Chamæota.		26. Psalliota.	
	12. Pluteus.		27. Pilosace.	

** Hymenophore confluent and homogeneous with the fleshy Stem.

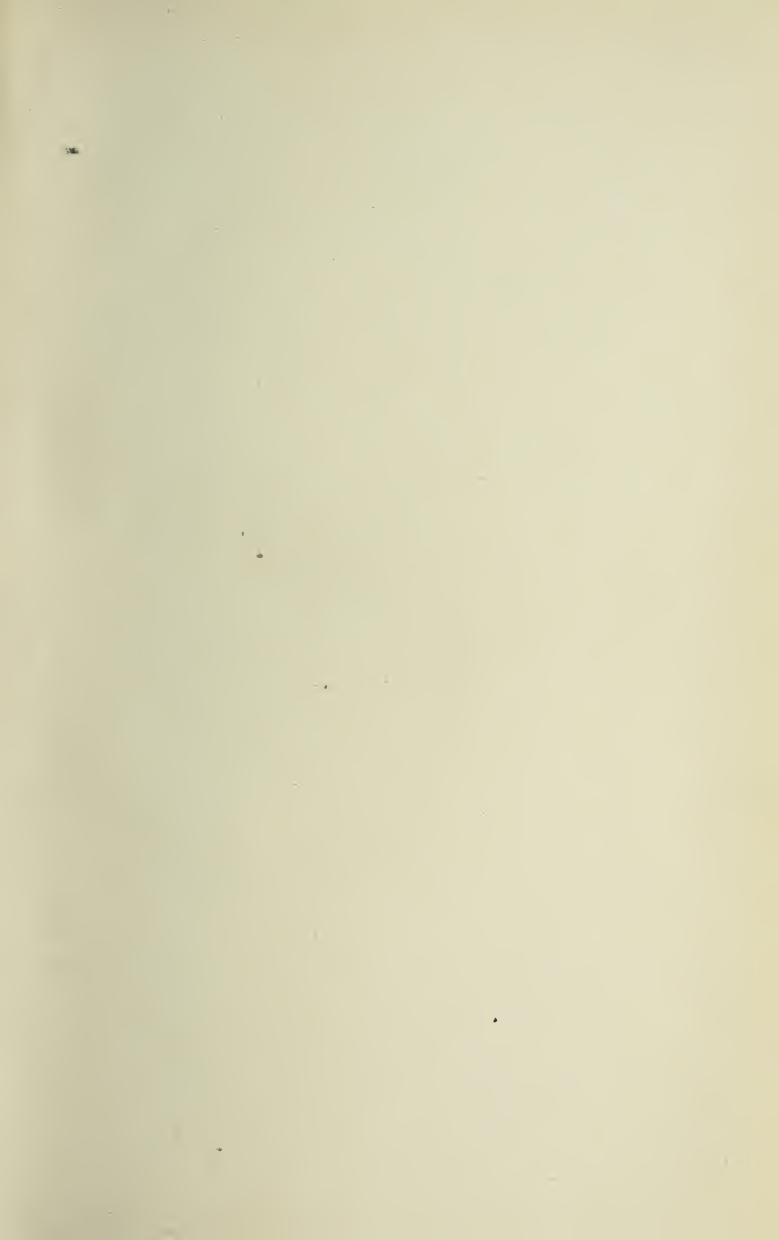
3. Armillaria.		19. Pholiota.	28. Stropharia.	
4. Tricholoma.	13. Entoloma.	20. Hebeloma.	29. Hypholoma.	33. Panæolus.
5. Clitocybe.	14. Clitopilus.	21. Flammula.		
6. Pleurotus.	15. Claudopus.	22. Crepidotus.		

*** Hymenophore confluent with, but heterogeneous from the cartilaginous Stem.

7. Collybia.	16. Leptonia.	23. Naucoria.	30. Psilocybe.	
8. Mycena.	17. Nolanea.	24. Galera.	31. Psathyra.	34. Psathyrella.
9. Omphalia.	18. Eccilia.	25. Tubaria.	32. Deconica.	

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